UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	
DTE ELECTRIC CO.	Docket Nos. 52-033
(Fermi Nuclear Power Plant, Unit 3)	

NRC STAFF PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR CONTENTIONS 8 AND 15

Marcia Carpentier
Kevin Roach
Megan Wright
Counsel for the NRC Staff

January 22, 2014

TABLE OF CONTENTS

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I. INTRODUCTION

1. This partial initial decision rules on all outstanding issues regarding the Intervenors' challenges in Contentions 8 and 15.[2] In Contention 8, the Intervenors allege that the NRC Staff's analysis in its Final Environmental Impact Statement (FEIS) of environmental impacts to the eastern fox snake is inadequate. In Contention 15, the Intervenors allege that the Applicant DTE Electric Co. (DTE or Applicant) failed to comply with Appendix B to 10 C.F.R. Part 50 and did not establish nor maintain a Quality Assurance (QA) program for its safety-related combined license (COL) activities. This proceeding relates to DTE's application for one ESBWR advanced boiling water reactor to be built and operated at the site of the currently operating Fermi Nuclear Power Plant, Unit 2, in Monroe County, Michigan. Contrary to the

[1] At hearing, the Licensing Board set a filing deadline of January 21, 2014, for proposed findings of fact and conclusions of law. However, federal government offices in Washington DC, including the NRC headquarters, were closed on that date because of snow. Therefore, according to the provisions of 10 C.F.R. § 2.306(a), the Staff is filing on the first business day following that closure.

[2] Intervenors are Beyond Nuclear, Citizens for Alternatives to Chemical Contamination, Citizens Environmental Alliance of Southwestern Ontario, Don't Waste Michigan, Sierra Club, Keith Gunter, Edward McArdle, Henry Newman, Derek Coronado, Sandra Bihn, Harold L. Stokes, Michael J. Keegan, Richard Coronado, George Steinman, Marilyn R. Timmer, Leonard Mandeville, Frank Mantei, Marcee Meyers, and Shirley Steinman.

claims the Intervenors make in Contention 8, we find that the Staff's FEIS adequately discussed the reasonably foreseeable environmental impacts to the eastern fox snake. We conclude, therefore, as a matter of law, that the FEIS meets the requirements of the National Environmental Policy Act (NEPA) and the NRC's regulations in 10 C.F.R. Part 51. We also find that DTE has implemented a QA plan that complies with Appendix B to Part 50 and demonstrated that the information in its COL Application was developed with appropriate QA controls. We conclude, therefore, as a matter of law, that DTE's QA plan meets the requirements of Appendix B to 10 C.F.R. Part 50.

II. BACKGROUND

A. General Procedural History

2. By letter dated September 18, 2008, DTE submitted a COL application (Application or COLA) for one new reactor to be built and operated on the existing Fermi 2 site in Monroe County, Michigan.[3] The *Federal Register* notice of docketing was published on December 2, 2008. 73 Fed. Reg. 73,350. The *Federal Register* notice of hearing and opportunity to petition for leave to intervene (Hearing Notice) was published on January 8, 2009. 74 Fed. Reg. 836. On March 9, 2009, the Intervenors filed a Petition for Leave to Intervene in the Fermi 3 COLA proceeding, along with a separate document containing 14 contentions (Original Contention Filing). Petition of [Intervenors] for Leave to Intervene in Combined Operating License Proceedings and Request for Adjudication Hearing (March 9, 2009). On July 8, 2009, the Board issued a Memorandum and Order granting the hearing request and admitting parts of four contentions (Contentions 3, 5, 6 and 8). *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-09-16, 70 NRC 227 (2009). On November 6, 2009, the Intervenors filed a Supplemental Petition for Admission of a Newly Discovered Contention, which included a QA

[3] Letter to Jack M. Davis, DTE, to NRC, Detroit Edison Company Submittal of a Combined License Application for Fermi 3 (NRC Project No. 757) (Sept. 18, 2008) (ADAMS Accession No. ML082730763).

contention numbered as Contention 15. Supplemental Petition for Admission of a Newly Discovered Contention, and for Partial Suspension of COLA Adjudication (Nov. 6, 2009) (Supplemental Petition). Following all briefing, the Board admitted a reformulated version of Contention 15. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-10-09, 71 NRC 493, 503-22 (2010).

3. Contention 3, as admitted by the Board, challenged the Applicant's failure to explain in the Environmental Report (ER) how it will manage Class B and C low-level radioactive waste (LLRW) in the absence of an off-site disposal facility. *Fermi,* LBP-09-16, 70 NRC at 252-68. Following revision of the ER, the Applicant filed a motion for summary disposition on Contention 3 on April 26, 2010. The Board granted the motion and dismissed Contention 3, reasoning that Contention 3, as a "contention of omission," was moot since the Applicant submitted an ER revision "acknowledging partial closure of the Barnwell facility and explaining how they will manage Class B and C waste given the lack of access to such a facility. Order Granting Motion for Summary Disposition of Contention 3, July 9, 2010 (unpublished) at 5. Therefore, the Board held that it would not consider the adequacy of the LLRW management plan in this proceeding. *Id.* at 7.

4. Contention 5, as admitted by the Board, consisted of two parts; the first part alleged that on-site measurements of parameters required under 10 C.F.R. § 100.20(c)(3) were omitted from the Applicant's COLA, and the second part concerned an excess of effluent concentration limits in a groundwater analysis of radionuclide transport. *Fermi,* LBP-09-16, 70 NRC at 272. The Applicant filed a motion for summary disposition of this contention on February 3, 2011, and all parties agreed the motion should be granted. As such, the Board granted the Applicant's motion and dismissed Contention 5 from the proceeding. Order Granting Motion for Summary Disposition of Contention 5, March 1, 2011 (unpublished) at 3.

5. Contention 6, as admitted by the Board in part, challenged the adequacy of the ER's analysis of the potential contribution of chemical and thermal effluent from Fermi 3 to algal

production. *Fermi,* LBP-09-16, 70 NRC at 236-37. On September 17, 2010, the Applicant moved for summary disposition of Contention 6 based on its supplements to the ER, but the Board denied the motion because there were still material facts in dispute. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-11-14, 70 NRC 591, 598-601 (2010). The Applicant again filed a motion for summary disposition on April 17, 2012. The Board agreed with the Applicant that the draft environmental impact statement (DEIS) and other written materials submitted by the Applicant and the Staff were sufficient to establish that no material issues of fact remained with regard to Contention 6. As such, the Board dismissed Contention 6 from the proceeding. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-12-23, 76 NRC 445, 452-55 (2012).

6. Contention 8, as admitted by the Board, is one of the two remaining contentions[4] in this proceeding. Contention 8, as submitted with the Intervenors' initial intervention petition, challenged the Applicant's ER in asserting that "[a]lternatives must be examined and in the event that Fermi 3 is pursued mitigative measures must be taken" with respect to the eastern fox snake. Original Contention Filing at 89. In support of the contention, the Intervenors cited a scoping comment submitted by Lori Sargent, a nongame wildlife biologist at the Michigan Department of Natural Resources (MDNR), which discussed possible impacts to the eastern fox snake and stated that the MDNR "would like to see a plan for protection of this rare species with regard to this new reactor project."[5] *Id*. at 89-90 (citing Sargent Letter (Exhibit NRC E7)).

[4] Additionally, there is an outstanding issue in this proceeding regarding whether certain impacts associated with the offsite transmission line corridor presented in Contention 23, which we dismissed as procedurally defective, are nevertheless appropriate for the Board's review under the NRC's standard for *sua sponte* review under 10 C.F.R. § 2.340(b). On April 30, 2013, we invited the parties to submit briefs on this question. *See* Board Order (Denying Intervenors' Motion for Resubmission of Contention 23) (unpublished). The parties filed briefs discussing their positions on this matter on May 30, 2013, and it remains pending before the Board.

[5] This scoping comment was included, along with other scoping comments submitted to the NRC pursuant to 10 C.F.R. §§ 51.26-28, in the Staff's Draft Environmental Impact Statement (DEIS). Draft Environmental Impact Statement for Combined License (COL) for Enrico Fermi Unit 3, NUREG-2105 (October 2011) (ADAMS Accession Nos. ML11287A108 (Volume 1) and ML11287A109 (Volume 2)), Appendix D, "Scoping Comments and Responses," at D-52 to D-53.

7. We found Contention 8 partially admissible, stating that the Applicant's ER "fails to adequately assess the project's impacts on the eastern fox snake and to consider alternatives that would reduce or eliminate those impacts." *Fermi*, LBP-09-16, 70 NRC at 286. However, our ruling made clear that the contention was not admissible "to the extent it asks that [the Board] order the Applicant to adopt additional mitigation measures for the protection of the eastern fox snake." *Id.* The Board stated that neither the National Environmental Policy Act (NEPA) nor NRC's environmental regulations in 10 C.F.R. Part 51 "requires applicants to eliminate adverse environmental impacts. Courts have consistently interpreted NEPA as a procedural statute that requires disclosure and analysis of environmental impacts, not one that imposes substantive obligations for the protection of natural resources." *Id*. at 287. In admitting Contention 8, the Board stated that it was "a dispute of material fact concerning the presence of the eastern fox snake at the site and the impact of Fermi Unit 3 construction activities on the population." *Id.* The Applicant first moved for summary disposition of Contention 8 on November 16, 2010, arguing that "Detroit Edison has resolved discrepancies in the ER regarding the presence of the Eastern Fox snake at the Fermi site, developed a mitigation plan for the snake, and submitted an addendum to the ER describing those plans."[6] The Applicant argued that, in the course of answering the NRC Staff's Requests for Additional Information (RAIs), it had "provided updated information regarding the location of Eastern Fox snake sightings, revised the application to reduce the impacts of Fermi Unit 3 construction on snake habitat, and developed a site-specific mitigation plan to reduce impacts to Eastern Fox snakes." *Id*. at 5. In particular, the Applicant noted that it had altered the site layout for the Fermi 3 project to reduce wetlands impacts by 120 acres, thereby preserving eastern fox snake habitat that would have been disrupted under the original plans. *Id*. at 7-8.

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[6] Applicant's Motion for Summary Disposition of Contention 8 at 4 (Nov. 16, 2010) (ADAMS Accession No. ML103200342) (First Summary Disposition Motion).

8. The Board denied the Applicant's First Summary Disposition Motion, stating that "the revised ER provides no information whatsoever about MDNR's[7] views of Applicant's draft mitigation plan or revised site layout."[8] According to the Board, this indicated that there was still "an unresolved conflict between the opinion of MDNRE and that of DTE concerning the impact of Fermi Unit 3 construction activities on the eastern fox snake and the need for mitigation of those impacts." *Id*.

9. The NRC Staff published the DEIS for this proceeding in October 2011. The DEIS included a citation to the Applicant's draft Habitat and Species Conservation Plan for the eastern fox snake (Mitigation Plan), which the Applicant submitted to the NRC as part of a large filing responding to Staff RAIs.[9] The DEIS noted, however, that the MDNR had not reviewed the Mitigation Plan at the time of DEIS publication. DEIS at 4-35. Based on information in the Applicant's ER and RAI responses, and other references as cited in the DEIS, the NRC Staff concluded that impacts from building the proposed facilities to terrestrial and wetlands ecology, including the eastern fox snake, would be SMALL.[10] Mitigation measures to be imposed by other agencies, including the MDNR, were cited in support of this conclusion. DEIS at 4-44.

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[7] The MDNR and the Michigan Department of Environmental Quality (MDEQ) were merged into a single agency called the Michigan Department of Natural Resources and Environment (MDNRE) in 2009. *See* Mich. Exec. Order No. 2009-45 (Oct. 8, 2009). The merger lasted until 2011, when the departments were split back into separate agencies, and the two now function separately under their former names. *See* Mich. Exec. Order No 2001-1 (Jan. 4, 2011).

[8] *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-11-14, 73 NRC 591, 606 (2011).

[9] DEIS at 4-35, citing Letter from Peter W. Smith, Director, Nuclear Development—Licensing and Engineering, Detroit Edison Co., to NRC Document Control Desk, Detroit Edison Company Response to NRC Requests for Additional Information Letter No. 2 Related to the Environmental Review (Feb. 15, 2010), Attachment 7, Enclosure 2 at 60-70 (ADAMS Accession No. ML100541329).

[10] DEIS at 4-44. The Staff's designation of environmental impacts as SMALL, MODERATE, or LARGE is based on definitions presented in 10 C.F.R. Part 51, Appendix B, Table B-1. When used as defined in this table, the words are written in capital letters to emphasize that the regulatory definitions, rather than the conventional English dictionary definitions, are intended. *See also* FEIS at 1-4 (Exhibit NRC E1A).

10. On June 11, 2012, the Applicant again filed for summary disposition of Contention 8.[11] In its Second Summary Disposition Motion, the Applicant stated that it had submitted its Mitigation Plan related to construction impacts on the eastern fox snake to the MDNR and received the MDNR's approval of the plan. *Id*. at 9-10. For this reason, the Applicant argued that all issues related to Contention 8 were resolved, and that the Applicant was entitled to summary disposition in its favor.

11. Although we again denied summary disposition of the contention, we acknowledged that no disputes remain regarding the presence of the fox snake at the site or regarding the fact that Detroit Edison has modified the site layout and developed a Mitigation Plan. *Detroit Edison Co.* (Fermi Nuclear Power Plant, Unit 3), LBP-12-23, 76 NRC 445, 465-66. (Nov. 9, 2012). We also agreed that the Intervenors' criticisms of MDNR's review of the Mitigation Plan are outside the scope of Contention 8 and outside NRC's jurisdiction. *Id*. at 464. The Board characterized the remaining disputed issue as "whether the Staff's reliance on the Conservation Plan [Mitigation Plan] is consistent with the [Council On Environmental Quality's] Guidance." *Id*. at 466.

12. Following the Board's denial of its Second Summary Disposition Motion, the Applicant filed the "Applicant's Motion for Reconsideration" on November 19, 2012. ADAMS Accession No. ML12324A472. The Staff filed an answer in support of this motion and the Intervenors filed an answer in opposition to it on November 29, 2012.[12] In its motion, the Applicant argued that the Board erred in denying the Second Summary Disposition Motion because neither NEPA nor Commission precedent require that mitigation plans be adopted or otherwise imposed through enforceable mechanisms and because the legal standard applied by

[11] Applicant's Motion for Summary Disposition of Contention 8 (June 11, 2012) (Second Summary Disposition Motion).

[12] NRC Staff Answer to Applicant's Motion for Reconsideration (Nov. 29, 2012) (ADAMS Accession No. ML12334A583); Intervenor's Response in Opposition to Applicant's Motion for Reconsideration of Denial of Summary Disposition of Contention 8 (Eastern Fox Snake) (Nov. 29, 2012) (ADAMS Accession No. ML12334A810).

the Board applies only in the case of a "mitigated" Finding of No Significant Impact (FONSI)—not to mitigation discussed in the context of an EIS. Applicant's Motion for Reconsideration at 1-2.

13. Before the Board ruled on the Applicant's Motion for Reconsideration, the Staff published and made available to the public its FEIS on January 18, 2013. In the FEIS, the Staff made certain changes to the analysis and conclusions in the DEIS regarding impacts to the eastern fox snake from building Fermi Unit 3 that are relevant to Contention 8. Of particular note, the detailed discussion of building-related impacts on the eastern fox snake included a new analysis of the Applicant's revised Habitat and Species Conservation Plan (Mitigation Plan (Exhibit NRC E5)), which the MDNR found to be acceptable in a preliminary review. FEIS at 4-37 (Exhibit NRC E1A) (citing MDNR Review Letter (Exhibit NRC E15)). The impact determination for terrestrial building-related impacts and cumulative impacts, which encompasses potential impacts to the eastern fox snake, was also changed from SMALL in the DEIS to SMALL to MODERATE in the FEIS to reflect the Staff's analysis of impacts both in the event that mitigation occurs as the Staff expects it will, but also in the event that it does not. *Id*. at 4-47, 7-21.

14. On January 30, 2013, the Board denied the Applicant's Motion for Reconsideration for several reasons.[13] We reasoned that, insofar as the Applicant's Motion for Reconsideration addressed analyses in the DEIS, the FEIS had been issued with different relevant analyses, and therefore the Applicant's Motion was moot. Order Denying Motion for Reconsideration at 4. Contention 8 is not necessarily moot in light of the new FEIS analyses, we stated, because resolution of the contention "should be based on filings that directly address the question whether the FEIS analyzes impacts to the snake in compliance with NEPA's requirements." *Id*. at 6. We also ruled that the Applicant's arguments were either untimely or

[13] Licensing Board Memorandum and Order (Denying Motion for Reconsideration of the Board's Order Denying Second Motion for Summary Disposition on Contention 8) (January 30, 2013) (unpublished) (Order Denying Motion for Reconsideration).

failed to satisfy the standards for motions for reconsideration in 10 C.F.R. § 2.323(e). Accordingly, as we previously summarized, the issue in Contention 8 remained whether the FEIS's discussion of mitigation measures is sufficient to satisfy NEPA with respect to impacts to the eastern fox snake. *Fermi*, LBP-12-23, 76 NRC at 470. .

15. Contention 15, as admitted by the Board, is the other remaining contention in this proceeding. Contention 15, submitted with the Intervenors' Supplemental Petition on November 6, 2009, alleges that DTE does not comply with Appendix B to Part 50 because it fails to establish and maintain a QA program for the conduct of safety-related application activities, and because it failed to retain overall control of safety-related activities performed by Black & Veatch, a DTE contractor. Supplemental Petition at 2-3. Contention 15, as reformulated by the Board, reads as follows:

> Detroit Edison (DTE) failed to comply with Appendix B to 10 C.F.R. Part 50 to establish and implement its own quality assurance (QA) program when it entered into a contract with Black and Veatch (B&V) for the conduct of safety-related combined license (COL) application activities and to retain overall control of safety-related activities performed by B&V. This violation began in March 2007 and continued through at least February 2008. Further, DTE failed to complete internal audits of QA programmatic areas implemented for the Fermi 3 COL Application, and DTE also has failed to document trending of corrective actions to identify recurring conditions adverse to quality since the beginning of the Fermi Unit 3 project in March 2007.
>
> Contention 15A: These deficiencies adversely impact the quality of the safety-related design information in the FSAR [Final Safety Analysis Report] that is based on B&V's tests, investigations, or other safety-related activities. Because the NRC may base its licensing decision on safety-related design information in the FSAR only if it has reasonable assurance of the quality of that information, it may not lawfully issue the COL until the deficiencies have been adequately corrected by the Applicant, or until the Applicant demonstrates that the deficiencies do not affect the quality of safety-related design information in the FSAR.
>
> Contention 15B: Although DTE claims that in February 2008 it adopted a QA program that conforms to Appendix B, DTE has failed to implement that program in the manner required to properly oversee the safety-related design activities of B&V. This demonstrates an ongoing lack of commitment on the part of DTE's management to compliance with NRC QA regulations. The NRC cannot support a finding of reasonable assurance that the plant, as built, can and will be operated without endangering the public health and safety until DTE provides satisfactory proof of a fully-implemented QA program that will govern the design,

construction, and operation of Fermi Unit 3 in conformity with all relevant NRC regulations.

Fermi, LBP-10-09, 71 NRC at 510-11.

16. On April 17, 2012, the Applicant filed a motion for summary disposition of Contention 15. The Staff filed its answer to the Summary Disposition Motion on May 7, 2012, and the Intervenors filed their answer on May 17, 2012. Although the Intervenors' answer did not directly respond to all of the Applicant's substantive arguments in the motion, we denied summary disposition, citing affidavits the Intervenors filed during an earlier phase of the proceeding that, in our view, indicated there were still material facts in dispute concerning the issues raised in Contention 15. *Fermi,* LBP-12-23, 76 NRC at 477-78.

B. Evidentiary Filings and Hearing

17. On March 29, 2013, the Intervenors, the Applicant and the Staff filed their pre-filed direct testimony for Contention 8, along with exhibits and initial statements of position.[14] The Intervenors, the Applicant and the Staff filed their pre-filed direct testimony for Contention 15, along with exhibits and initial statements of position, on April 30, 2013.[15]

18. On April 29, 2013, the Applicant and the Staff filed their pre-filed rebuttal testimony and exhibits for Contention 8. The Intervenors did not file rebuttal testimony. On May 30, 2013, all parties filed their pre-filed rebuttal testimony and exhibits for Contention 15.

[14] The Intervenors Pre-filed Direct Testimony for Contention 8 did not include the testimony of an expert witness. The Applicant's Pre-Filed Direct Testimony for Contention 8 included the testimony of Peter Smith, Randall Westmoreland, and David Misfud. The Staff's Pre-Filed Direct Testimony for Contention 8 included the testimony of J. Peyton Doub and David Weeks.

[15] The Intervenors Pre-filed Direct Testimony for Contention 15 included the testimony of Arnold Gundersen. The Applicant's Pre-filed Direct Testimony for Contention 15 included the testimony of Peter Smith, Stanley Stasek, Ronald Sacco and Steven Thomas. The Staff's Pre-filed Direct Testimony for Contention 15 included the testimony of Adrian Muñiz, Ada Rivera-Varona and George A. Lipscomb.

19. On May 15, 2013,[16] the Applicant and the NRC Staff filed motions *in limine* to strike portions of the Intervenors' pre-filed testimony and statements of position on Contention 8. The Applicant and the Staff argued that the Intervenors raised issues related to the offsite transmission line corridor that were outside the scope of Contention 8 as admitted.[17] The Applicant also argued that Intervenors inappropriately raised issues outside the scope of the contention regarding the characterization of the offsite wetland mitigation area and the adequacy of U.S. Army Corps of Engineers reviews and enforcement authority. *See* DTE Motion in Limine at 4-7. On May 28, 2013, the Intervenors filed an opposition to the Staff's and the Applicant's *in limine* motions. On June 17, 2013, the Board issued an Order granting the Staff's and the Applicant's motion to strike to the extent that the Intervenors' statement of position discusses the offsite transmission line corridor. Order Granting in Part and Denying in Part Motions in Limine, June 17, 2013 (Order Ruling on Motions in Limine) (unpublished).

20. We held a conference call with all parties on September 16, 2013, and subsequently issued an Order requiring Intervenors to resubmit their exhibits individually and to refile their testimony with exhibit numbers.[18] On September 26, 2013, Intervenors submitted a Motion for Extension of Time to Submit Prefiled Exhibits and requested that their prefiled exhibits and updated prefiled testimony be filed on October 1, 2013. On October 1, 2013, the Intervenors again submitted a Motion for Extension of Time, this time asking that their prefiled exhibits and updated prefiled testimony be filed on October 4, 2013. The Staff opposed this

[16] Also on May 15, 2013 Intervenors filed an *in camera* request with the licensing board to allow Intervenors to cross-examine Applicant and Staff witnesses regarding Contention 8. On May 29, 2013, we issued an Order requiring that Intervenors file their cross-examination request publicly. Order (Directing Intervenors to Publicly File their Request to Allow Cross-Examination for Contention 8), May 29, 2013 (unpublished). On June 11, 2013, Intervenors filed a request to withdraw their motion to permit cross-examination.

[17] *See* Applicant's Motion in Limine for Intervenors' Statement of Position for Contention 8, May 15, 2013 at 3-4 (DTE Motion in Limine); NRC Staff's Motion in Limine to Exclude Portions of the Parties' Testimony and Statement of Position on Contention 8, May 15, 2013 at 3-5.

[18] Order (Summarizing Pre-Hearing Conference) (Sept. 20, 2013) (unpublished).

motion on October 2, 2013. The Board granted this request on October 3, 2013, and also requested that the Staff file an objection to the Intervenors' exhibits by October 7, 2013.[19] The Staff filed its objections on October 7, 2013. The Intervenors replied on October 18, 2013, including in their reply a motion to withdraw three exhibits.[20] The Board did not agree with the Staff's objections to Intervenor exhibits Exhibit INTS 057 and Exhibit INTS 059 and admitted them into evidence. The Board also stated that it would consider Exhibit INTS 006 as support for previously filed testimony. However, the Board agreed with the Staff's objections to the Intervenors' exhibits filed after the October 4, 2013 deadline as being untimely.[21] The Board declined to admit these exhibits into evidence. Order (Ruling on Staff Objections to Intervenor Exhibits), Oct. 23, 2013 (unpublished).

21. On October 30, 2013, we convened an evidentiary hearing, where we admitted pre-filed testimony and evidence into the record for Contentions 8 and 15, heard opening statements, and took testimony on Contention 8 and Contention 15.[22] The evidentiary hearing continued on October 31, 2013, where we continued taking testimony on Contention 15 and the parties presented closing arguments on Contentions 8 and 15. On December 5, 2013, the parties proposed corrections to the hearing transcript for October 30, 2013 and October 31, 2013.

[19] Order (Granting Intervenors' Motions for Extension of Time, Requesting List of Objections from the NRC Staff, and Explaining Board Procedure in the Event of a Continued Government Shutdown), Oct. 3, 2013 (unpublished).

[20] The Intervenors withdrew INTS 027, 036 and 065.

[21] The Staff objected to the following exhibits as being untimely: INTS 034-035, 037-049, 064.

[22] On October 29, 2013, on the eve of the first day of the evidentiary hearing, the Intervenors filed a motion to suspend the Fermi 3 proceeding and to admit previously submitted Contention 13, which raised issues with the need and demand for power that would be generated by Fermi 3 . At the hearing the following day, the Board denied Intervenors' motion to suspend the proceeding and asked the parties to submit responses to Intervenors' proposal to admit Contention 13. Tr. at 279-80. The Applicant and the Staff submitted their responses to proposed Contention 13 on November 25, 2013. The Intervenors filed their reply on December 5, 2013.

22. The Board admitted the following pre-filed Staff exhibits into evidence for Contention 8: Exhibit NRC E1A and E1B to E22. NRC Hearing Transcript (Tr.) at 304. The Board admitted the following pre-filed Staff exhibits into evidence for Contention 15: Exhibits NRC S1 to S24. *Id.* at 305.

23. The Board admitted the following pre-filed Applicant exhibits into evidence for Contention 8: Exhibit DTE 000001 to 000014 and Exhibits DTE 000096 to 000100. *Id.* at 303. The Board admitted the following pre-filed Applicant exhibits into evidence for Contention 15: Exhibits DTE 000015 to 000095. *Id.*

24. The Board admitted the following pre-filed Intervenor exhibits into evidence for Contention 8: Exhibits INTE 001 to 004. *Id.* at 301-02. The Board admitted the following pre-filed Intervenor exhibits into evidence for Contention 15: Exhibits INTS 001 to 005, Exhibits INTS 007 to 011, Exhibit INTS 031, Exhibits INTS 056 to 063 and Exhibits INTS 063 to 070. *Id.* at 300-01. In response to the Intervenors' request at the hearing to admit previously denied Exhibits INTS 034 to 035, Exhibit INTS 037 to 049 and Exhibit INTS 064, the Board instructed the Intervenors that they could file a motion to address the basis for that request and, if so, they should do so "as soon as possible" after the hearing. *Id.* at 650.

25. The Board admitted the following Board exhibits into evidence by Order issued October 25, 2013: 001 and 002. Order (Admitting Board Exhibits 001 and 002), Oct. 25, 2013 (unpublished).

26. On November 8, 2013, the Applicant moved to have Exhibits DTE 000109 and DTE 000110 entered into evidence. The Board entered these exhibits into evidence by Order on November 21, 2013. Order (Ruling on Applicant's Additional Exhibits), Nov. 21, 2013 (unpublished).

27. On December 27, 2013, the Intervenors, in response to the Board's request at the evidentiary hearing, filed a request to admit exhibits related to Contention 15 that were

previously denied by the Board.[23] The Staff and the Applicant submitted answers to this motion on January 6, 2014. The Intervenors replied on January 13, 2014.

C. Terminology

28. In discussions related to Contention 8 throughout this Order, we will refer to the terms "SMALL", "MODERATE" and "LARGE" used by the Staff in the FEIS and its testimony to denote determinations regarding levels of impact to particular environmental resources. The terms are discussed in Chapter 1 of the FEIS and are codified in Table B-1 of 10 C.F.R. Part 51, Subpart A, Appendix B. They are defined there as follows:

> SMALL – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.
>
> MODERATE – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
>
> LARGE – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

29. In discussions related to Contention 15 throughout this Order, we will use the term "safety-related" when discussing the applicability of Appendix B to 10 C.F.R. Part 50. The Definitions section of 10 C.F.R. Part 50 defines the term "safety-related" as referring to those structures, systems, and components

> that are relied upon to remain functional during and following design basis events to assure:
>
> (1) The integrity of the reactor coolant pressure boundary
>
> (2) The capability to shut down the reactor and maintain it in a safe shutdown condition; or
>
> (3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in § 50.34(a)(1) or § 100.11 of this chapter, as applicable.

10 C.F.R. § 50.2. This definition applies to all of 10 C.F.R. Part 50, including Appendix B.

[23] The Intervenors requested that the following previously excluded exhibits be admitted into evidence: INTS 034-035, 037-049, 064.

III. LEGAL AND REGULATORY REQUIREMENTS

A. General NEPA Requirements

30. Contention 8 arises under the National Environmental Policy Act (NEPA), and the NRC's regulations in Part 51 that implement that statute. 42 U.S.C. §§ 4321 *et seq*; 10 C.F.R. Part 51. NEPA requires that an agency prepare an EIS before approving any major Federal action that will significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C). The NRC requires its Staff to prepare an EIS prior to issuing a COL. 10 C.F.R. § 51.20(a)(2).

31. Under NEPA, the NRC is required to take a "hard look" at the environmental impacts of a proposed action, as well as reasonable alternatives to that action. *See Louisiana Energy Servs., L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87-88 (1998). This "hard look," however, is tempered by a "rule of reason" that requires agencies to address only impacts that are reasonably foreseeable – not remote and speculative. *See, e.g., Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-156, 6 AEC 831, 836 (1973). Accordingly, NEPA requires that an agency consider only "reasonably foreseeable" effects of a proposed licensing action and "does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts." *See Louisiana Energy Servs., L.P*. (National Enrichment Facility), CLI-06-15, 63 NRC, 687, 698 (2006); *Louisiana Energy Servs. L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005) (emphasis in original). Moreover, "NEPA gives agencies broad discretion to keep their inquiries within appropriate and manageable boundaries." *LES*, CLI-98-3, 47 NRC at 103. Similarly, environmental impacts should be discussed in proportion to their significance. 10 C.F.R. § 51.45(b)(1).

32. During its environmental review, the Staff "has discretion to rely on data, analyses, or reports prepared by persons or entities other than agency staff, including competent and responsible state authorities." *See*, *e.g*., *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), LBP-78-28, 8 NRC 281, 282 (1978). It is also appropriate to give

greater weight to an expert body's analysis in the subject area of its expertise. *See Carolina Power & Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-490, 8 NRC 234, 241 (1978). Ultimately, though, the Staff is responsible for all information used in the EIS and thus must conduct an independent evaluation of this information. 10 C.F.R. § 51.41; *see also Exelon Generation Co*. (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 NRC 134, 155 (2005). Therefore, "although the Staff need not replicate the work done by another entity, it must independently review and find relevant and scientifically reasonable any outside reports or analyses on which it intends to rely." *See Louisiana Energy Services, L.P*. (National Enrichment Facility), LBP-06-8, 63 NRC 241, 259 (2006).

33. Similarly, when relying on mitigation plans, there is no requirement that the mitigation plan be completely formulated and adopted in order for the agency to have adequately considered mitigation measures in its environmental analysis. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). In *Robertson*, the Supreme Court held that the United States Forest Service need not have a completed state mitigation plan to rely on in order for its EIS discussion of mitigation to be adequate, stating that "[s]ince it is those state and local governmental bodies that have jurisdiction over the area in which the adverse effects need be addressed, and since they have the authority to mitigate them, it would be incongruous to conclude that the Forest Service has no power to act until the local agencies have reached a final conclusion on what mitigation measures they consider necessary." *Id*. at 352-53.

34. Furthermore, as long as the agency's approach to its environmental analysis is reasonable, NEPA does not require the use of the best scientific methodology. *See Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc*. (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315-16 (2010). As NEPA does not require certainty or precision or the use of the best methodology, the Staff need not prove, and this Board need not find, that the Staff's approach is the most accurate or was performed with the best methodology. *See LES*, CLI-05-20, 62 NRC at 536 (stating that NEPA does not require certainty or precision); *Pilgrim,*

CLI-10-11, 71 NRC at 315 (stating that NEPA does not require use of the best methodology). Under NEPA, an agency is free to select its own methodologies so long as they are reasonable. *See Pilgrim*, CLI-10-11, 71 NRC at 316. In addition, NEPA must be construed "in the light of reason if it is not to demand virtually infinite study and resources." *Id*. (quoting *Natural Res. Def. Council v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988)). An EIS is not intended to be a research document reflecting the latest technology, data, and methods. *Id*. at 315. Because there "will always be more data that could be gathered," agencies "must have some discretion to draw the line and move forward with decisionmaking." *Id*. at 316 (quoting *Town of Winthrop v. FAA*, 535 F.3d 1, 11-13 (1st Cir. 2008).

B. Quality Assurance Requirements

35. NRC's regulations related to QA are found in Appendix B of 10 C.F.R. Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" (Appendix B), which states that

> [e]very applicant for a combined license under part 52 of this chapter is required by the provisions of 10 C.F.R. § 52.79 of this chapter to include in its [FSAR] a description of the quality assurance applied to the design, and to be applied to the fabrication, construction, and testing of the structures, systems, and components of the facility and to the managerial and administrative controls to be used to assure safe operation.

Appendix B, 10 C.F.R. Part 50, "Introduction." Appendix B requires an applicant to "establish at the earliest practicable time, consistent with the schedule for accomplishing the activities, a quality assurance program which complies with the requirements of [Appendix B]." *Id*., Section II, "Quality Assurance Program." While Appendix B mentions "quality assurance applied to the design," and establishes QA requirements for design control, it does not require an applicant for a COL to do all of its design-related work in-house under its own QA program. *Id*., "Introduction" & Section III, "Design Control."

36. NRC regulations permit applicants to "delegate to others, including contractors, agents, or consultants, the work of establishing and executing the [QA] program, or any part

thereof, but [the applicant] shall retain responsibility for the [QA] program." *Id*., Section I, "Organization." Appendix B imposes specific requirements related to procurement documents and control of purchased material, equipment, and services. *See id*., Section IV, "Procurement Document Control," and Section VII, "Control of Purchased Material, Equipment, and Services." The wording of Appendix B also indicates that an applicant may use procurement documents to "require contractors or subcontractors to provide a [QA] program consistent with the pertinent provisions of this appendix." *Id*., Section IV, "Procurement Document Control."

37. NRC guidance related to the review of QA programs in COL applications is described in the discussion of the Staff's review of the QA Program Description (QAPD) in the Fermi 3 Final Safety Analysis Report (FSAR), a part of the Fermi 3 COLA. The Staff used the NRC's Standard Review Plan (SRP), which the Staff developed using the American Society of Mechanical Engineers (ASME) NQA-1–1994, "Quality Assurance Requirements for Nuclear Facility Applications," supplemented by additional regulatory and industry guidance for nuclear operating facilities, in evaluating DTE's QA program. The SRP provides an outline of an acceptable QA program and acceptance criteria used by the NRC Staff in its review. While Staff guidance documents are not themselves regulatory requirements, it has long been established that compliance with relevant guidance documents is accorded special weight when determining whether an applicant has complied with NRC regulations. *See, e.g*., *Consumers Power Co*. (Big Rock Point Nuclear Plant), ALAB-725, 17 NRC 562, 568 (1983); *Long Island Lighting Co*. (Shoreham Nuclear Power Station, Unit 1), ALAB-900, 28 NRC 275, 290 (1988). *See also Private Fuel Storage, L.L.C*. (Independent Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 264 (2001) (reaffirming that compliance with guidance documents is entitled to "special weight" when the guidance was drafted for use in evaluating applications of the type under consideration); *Yankee Atomic Electric Co*. (Yankee Nuclear Power Station), CLI-05-15, 61 NRC 365, 375 n.26 (2005) (discussing the "special weight" to be given to Standard Review Plans).

C. Burden of Proof

38. An applicant generally has the burden of proof in a licensing proceeding. 10 C.F.R. § 2.325. However, in cases involving NEPA contentions, the burden shifts to the NRC because the NRC, not the applicant, has the burden of complying with NEPA. *See, e.g., Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), CLI-83-19, 17 NRC 1041, 1049 (1983). Nevertheless, because "the Staff, as a practical matter, relies heavily upon the Applicant's ER in preparing the EIS, should the Applicant become a proponent of a particular challenged position set forth in the EIS, the Applicant, as such a proponent, also has the burden on that matter." *Louisiana Energy Servs., L.P*. (Claiborne Enrichment Center), LBP-96-25, 44 NRC 331, 338-39 (1996), rev'd on other grounds by *Louisiana Energy Servs., L.P*. (Claiborne Enrichment Center) CLI-97-15, 46 NRC 294 (1997), citing *Pub. Serv. Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-471, 7 NRC 477, 489 n.8 (1978).

39. "NRC hearings on NEPA issues focus entirely on the adequacy of the NRC Staff's work." *Southern Nuclear Operating Co*. (Early Site Permit for Vogtle ESP Site), CLI-07-17, 65 NRC 392, 395 (2007). Therefore, in challenging the EIS, Intervenors must identify, with some specificity, the alleged deficiencies in the NRC's NEPA analysis. *See Hydro Res., Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 13 (1999). In order to advance a claim under NEPA, the Intervenor must allege with adequate support that the NRC Staff has failed to take a "hard look" at one or more significant environmental questions, meaning that the Staff has unduly ignored or minimized pertinent environmental effects of the proposed action. *Duke Energy Corp*. (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003) (discussing what an Intervenor must allege, with adequate support, to litigate a NEPA claim). As the Commission has stated, "[o]ur Boards do not sit to 'flyspeck' environmental documents or to add details or nuances. There may be mistakes in the EIS, but it is the Intervenor's burden to show their materiality and significance. If the ER (or EIS) on its face 'comes to grips with all important

considerations' nothing more need be done." *Exelon Generation Co., LLC* (Early Site Permit for Clinton), CLI-05-29, 62 NRC 801, 811 (2005) (quoting *Systems Energy Resources, Inc.* (Early Site Permit for Grand Gulf Site), CLI-05-4, 61 NRC 10, 13 (2005)). Finally, "in an adjudicatory hearing, to the extent that any environmental findings by the Presiding Officer (or the Commission) differ from those in the FEIS, the FEIS is deemed modified by the decision." *Hydro Resources, Inc*. (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31, 53 (2001).

D. Expert Witnesses

40. An expert opinion is only admissible if the witness is competent to give an expert opinion and adequately states and explains the factual basis for the expert opinion. *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-05-04, 61 NRC 71, 81 (2005). An admissible expert opinion must be "based upon sufficient facts or data to be the product of reliable principles and methods that the witness applied to the facts of the case." *Id.* at 80. In addition, a party bears the burden of demonstrating that its witness is qualified to serve as an expert. *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-21, 60 NRC 21, 27 (2004). "A witness may qualify as an expert by knowledge, skill, experience, training, or education to testify [i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue." *Id.* at 27-28 (internal quotation marks omitted, alteration in original).

IV. FINDINGS OF FACT FOR CONTENTION 8

A. Expert Witnesses

41. For Contention 8, the NRC Staff put forth the testimony of two witnesses, and DTE put forth the testimony of three witnesses.[24] The Board finds that all of the witnesses are

[24] Intervenors submitted legal briefs in support of their position on Contention 8, but did not submit witness testimony. Accordingly we need not address expert witness qualifications for the Intervenors on this contention.

qualified as expert witnesses in the subject matters in which they provided testimony. A summary of the witnesses' professional qualifications is provided below.

1. Staff Witnesses

42. The Staff presented two expert witnesses in its direct and rebuttal pre-filed testimony. The Staff witnesses are (1) J. Peyton Doub and (2) David Weeks. We find that all of the Staff's witnesses are well-qualified as experts in the subject matters in which they provided testimony.

43. Mr. Joseph Peyton Doub is an Environmental Scientist in the Division of Site Safety and Environmental Analysis, NRO, NRC, and has been employed by the NRC for five years. Exhibit NRC E4 at 1. He received a B.S. in Plant Sciences from Cornell University in 1982 and an M.S. in Botany from the University of California at Davis in 1984. *Id*. He maintains active certifications as a Professional Wetland Scientist (PWS) and Certified Environmental Professional (CEP). *Id*. Since joining the NRC, Mr. Doub has reviewed or is presently reviewing terrestrial ecology matters on eight COL and early site permit applications. *Id*. at 2. He was also the lead author of revision 2 to Regulatory Guide 4.11, "Terrestrial Environmental Studies for Nuclear Power Stations." *Id*. As the lead terrestrial ecology reviewer for the Fermi 3 application, he participated in the acceptance review of the application, site audits, development of requests for additional information (RAIs) and review of RAI responses, preparation of FEIS sections, oversight of contractors working on the FEIS, review of the biological assessment prepared to support the NRC Staff's consultation under the Endangered Species Act, and participation in public meetings and response to public comments. Exhibit NRC E21 at A4. Before working at the NRC, Mr. Doub was a Senior Environmental Scientist for Tetra Tech NUS, Inc., where he performed numerous terrestrial ecology and wetlands reviews in support of major federal permit applications, including two COL applications. Exhibit NRC E4 at 3-4. Mr. Doub has over 25 years of professional experience in mapping, characterizing, and evaluating

possible impacts to terrestrial habitats, especially wetlands. Exhibit NRC E21 at A4. Mr. Doub has visited both the Fermi site and the proposed offsite wetland mitigation parcel. *Id*.

44. Mr. David A. Weeks has been employed by Ecology and Environment, Inc. as Chief Environmental Scientist since 2007. Exhibit NRC E3 at 1. He received his B.S. in Resources Management from the State University of New York College of Environmental Science and Forestry in 1975 and his M.S. in Forestry from the University of Massachusetts in 1980. *Id*; *see also* Exhibit NRC E21 at A3. His previous positions include environmental resource positions with the U.S. Department of Agriculture Natural Resources Conservation Service and the U.S. Environmental Protection Agency. *Id.* at A3. In his current position, he is responsible for developing the ecological sciences sections of EISs and environmental assessments (EAs), biological assessments, and other environmental documents with particular respect to terrestrial ecology and threatened and endangered species subject areas. Exhibit NRC E21 at A2. He has managed or contributed to the production of EISs, EAs, and other environmental documents for projects in 12 states, including Michigan. *Id*. at A3.

2. Applicant Witnesses

45. The Applicant produced three witnesses in support of its testimony on Contention 8. The Applicant's witnesses are (1) Mr. Peter Smith, (2) Mr. Randall Westmoreland, and (3) Mr. David Mifsud. We find that all of the Applicant's witnesses are well-qualified as experts in the subject matters in which they provided testimony.

46. Mr. Peter Smith is the Director, Nuclear Development – Licensing and Engineering, for Fermi 3 and has served in that position since 2007. Exhibit DTE 000001 at A2. In this position, he has overall responsibility for the Fermi 3 project, including the COL Application and other State and Federal permits and approvals. *Id*. He also is aware of DTE's interactions with the Michigan Department of Natural Resources (MDNR) and the measures that DTE has committed to in order to mitigate impacts to the eastern fox snake. *Id*. at A2 and A5.

47. Mr. Randall Westmoreland is the Licensing – Technical Expert for the Fermi 3 project and has been in that position since March 2008. *Id*. at A7. He is the project lead for all environmental aspects of the Fermi 3 project. *Id*. This includes responsibility for managing the environmental portion of the Fermi 3 COLA as well as other State and Federal permits and approvals associated with Fermi 3. *Id*. He has managed development of the plans to mitigate potential impacts to the eastern fox snake and directly participated in DTE's interactions with the MDNR regarding the eastern fox snake. *Id*.

48. Mr. David Mifsud is the owner of Herpetological Resource and Management, which is located in Michigan. *Id*. at A12. He is a certified professional wildlife biologist, wetland scientist, and ecologist with more than fifteen years of experience in wildlife biology, wetland ecology, and habitat conservation and management, with an emphasis on herpetofauna (i.e., reptiles and amphibians) in Michigan. *Id*. at A12 and A13. He has overseen and designed numerous projects and studies focused on the inventory, monitoring, conservation and management, rescue and translocation, and headstarting of amphibians and reptiles in Michigan for a variety of partners, including non-profit, private, and governmental agencies. His work has focused on rare Michigan species, including the eastern fox snake. *Id*. at A13. This work has included radio telemetry, mark-recapture, genetic, headstart, translocation, and repatriation studies. *Id*. Mr. Mifsud assisted in the development of DTE's plans to mitigate potential impacts to the eastern fox snake and has interacted with MDNR on numerous other projects. *Id*. at A13 and A15.

B. Discussion of Contention 8 Testimony

1. Introduction

49. As discussed above, Contention 8 challenges the analysis in the FEIS of impacts to the eastern fox snake caused by building activities on the proposed Fermi 3 site and of reasonable mitigation alternatives.

50. At the oral hearing, we focused on questions related to the proposed eastern fox snake mitigation plan and its implementation. Therefore, while we will address the other topics included in the prefiled testimony of the parties, our decision below primarily focuses on the adequacy under NEPA of the Staff's analysis of the provisions of that plan to support its evaluation of proposed mitigation in the FEIS. We discuss the Staff and Applicant's oral and prefiled testimony in the order in which they presented testimony at the evidentiary hearing. Lastly, we discuss the legal arguments submitted by the Intervenors.

51. After considering the evidence presented, we find that the FEIS took the appropriate hard look at mitigation alternatives for the eastern fox snake, that the Staff appropriately determined that it was reasonably foreseeable that implementation of the mitigation proposed for the snake would be implemented, and that the FEIS reasonably accounted for any uncertainty regarding impact levels to the snake by analyzing the impacts that could occur in the event that no mitigation were implemented.

2. Background on Eastern Fox Snake and Proposed Mitigation Plans

52. The Staff's and Applicant's witnesses provided background information regarding biological traits of the eastern fox snake (Elaphe gloydi) in their prefiled and oral testimony. The eastern fox snake is designated as a "threatened" species under Michigan law, though it is not a federally listed species. *Id*. at A5. Relatively little is known about the life history of the eastern fox snake due to its cryptic nature regarding habitat location and natural camouflage. Exhibit NRC E21 at A11, Tr. at 313, 328. It is a species that prefers open wetlands with herbaceous vegetation, but may also inhabit a variety of other natural and disturbed habitat types. Exhibit DTE 000001 at A23. Therefore, all undeveloped areas of the Fermi site can be considered potential habitat for the eastern fox snake, and individual snakes have been sighted on the Fermi site and in Monroe County numerous times. Exhibit NRC E21 at A11. The range of the eastern fox snake is estimated to consist of "suitable localities along and near the shores of Lakes Huron and Erie, from Georgian and Saginaw Bays southward to north central Ohio, and

eastward along the northern shore of Lake Erie to Long Point and perhaps Buffalo." *Id*. at A11, *citing* Exhibit NRC E11.

53. The Staff's and Applicant's witnesses also provided background information regarding the features of the two different proposed mitigation plans that are at issue in Contention 8: DTE's proposed Mitigation Plan for the eastern fox snake,[25] and DTE's proposed offsite Wetland Mitigation Plan.[26] Mr. Mifsud summarized the important features of the Mitigation Plan for the eastern fox snake as including training, pre-job briefs to workers on the possible presence of the snake, pre-construction surveys, placement of barrier fences, signage, mitigation during construction, and species monitoring. Exhibit DTE 000001 at A27. The Michigan Department of Natural Resources (MDNR), which administers the State's threatened and endangered species conservation programs under the Michigan Natural Resources and Environmental Protection Act of 1995, would be responsible for issuing a permit based on the Mitigation Plan and enforcing its compliance. Exhibit NRC E21 at A23. The Wetland Mitigation Plan provides for creating additional wetlands, which could provide suitable habitat for relocated eastern fox snakes, at a location near the Fermi 3 site. Exhibit NRC E21 at A18. The Wetland Mitigation Plan would be enforced by the U.S. Army Corps of Engineers and the Michigan Department of Environmental Quality (MDEQ) under applicable Federal and State laws. *Id*. MDEQ has issued a wetland permit to DTE, which approves the Wetland Mitigation Plan and includes it as a condition. Exhibit DTE 000001 at A42.

3. Staff Testimony

54. The Staff witnesses provided testimony explaining their review approach in the FEIS. Mr. Doub testified at the hearing that the Staff used a conservative approach in analyzing

[25] The proposed Mitigation Plan for the eastern fox snake is entitled "Fermi 3 Construction, Habitat and Species Conservation Plan, Eastern fox snake (Elaphe gloydi)" and is admitted into evidence in this proceeding (NRC E15). We will refer to it as the "Mitigation Plan."

[26] The offsite Wetland Mitigation Plan is entitled "Fermi 3 U.S. Army Corps of Engineers Mitigation Strategy and Final Design" and is admitted into evidence in this proceeding as Appendix K to the FEIS (NRC E1B). We will refer to it as the "Wetland Mitigation Plan."

potential impacts to the eastern fox snake by examining impacts to the regional subpopulation of the snake, rather than the species as a whole. Tr. at 327-28. Based on its analysis, the Staff concluded in the FEIS that impacts to the eastern fox snake from building activities associated with the proposed Fermi 3 would be SMALL if proposed mitigation were successfully implemented and no greater than MODERATE if it were not. Exhibit NRC E21 at A19; *see also* Tr. at 327-28. Mr. Doub testified that this approach was consistent with Staff practice and guidance. Tr. at 326. The mitigation activities that were instrumental to this impact determination are those called for by the aforementioned two proposed mitigation plans: the Applicant's proposed Mitigation Plan for the eastern fox snake; and the Applicant's proposed offsite Wetland Mitigation Plan. Exhibit NRC E21 at A19. Mr. Doub testified that, although the Staff considered full implementation of the mitigation plans to be the most likely scenario, the range of impacts described in the FEIS captured the potential for full implementation of the mitigation plans, ineffective implementation of the plans, and also non-implementation of the plans. Tr. at 328-29.

55. Regarding their expectation that proposed mitigation would be effectively implemented, the Staff witnesses stated in their prefiled testimony that they considered several factors as indicia that proposed mitigation was reasonably foreseeable, including the detailed nature and prescriptiveness of DTE's mitigation plans, DTE's identification of a funding source for the mitigation, DTE's public commitment to mitigation in documents submitted under the penalty of perjury, and the existence of applicable Michigan state law regarding species conservation. Exhibit NRC E21 at A22 and A23. The Staff witnesses also stated in prefiled testimony that the MDNR has provisionally reviewed the content of the proposed Mitigation Plan and found it to be acceptable. *Id*. at A19. The Staff testified that the Wetland Mitigation Plan, which calls for the creation of additional suitable habitat for the eastern fox snake on an offsite land parcel, has already been approved in conjunction with MDEQ's issuance of a wetlands permit (Exhibit NRC E16) and that they also expect that it would be required by the U.S. Army

Corps of Engineers as part of the project's permit under Section 404 of the Clean Water Act. *Id*. at A18; Tr. at 339-40.

56. In his testimony at the evidentiary hearing, Mr. Weeks explained that successful implementation of the mitigation plans would mean that measures would be implemented as called for by the Mitigation Plan and the Wetland Mitigation Plan and that performance indicators included in both plans would have to be met. Tr. at 309. Mr. Weeks also testified that most of the activities that would potentially affect the habitat of the eastern fox snake and individual specimens would occur during the site preparation and clearing phase of the project. *Id*. at 311.

57. The Staff described several aspects of the Mitigation Plan that they concluded would support its successful implementation. For example, Mr. Weeks stated that from the beginning of the project, the Mitigation Plan would include a program of capture, onsite or offsite relocation, and monitoring, including the use of transponder tags inserted into captured snakes. *Id*. at 310-11. Mr. Weeks and Mr. Doub testified that the results of the monitoring program would be reviewed in consultation with MDNR as part of an adaptive strategy to determine whether the Mitigation Plan was working as predicted and whether any changes to its protocols were needed. *Id*. at 312-13. In their prefiled testimony, the Staff witnesses further described the components of the Mitigation Plan that were analyzed in the FEIS. They stated that the Mitigation Plan includes educating construction workers through use of a site-specific eastern fox snake manual, briefing workers on the possible presence of the snake, relocating snakes from work areas to other suitable habitat, inspecting undeveloped areas for snakes prior to initiating work, walking down work areas to inspect for the eastern fox snake where it might occur, developing procedures for capturing and relocating eastern fox snakes, instructing workers to halt work in the presence of an eastern fox snake until it can be relocated, and maintaining a log of monitoring efforts and actions taken. Exhibit NRC E21 at A18. In their oral testimony, they stated their expectation that mitigation activities, such as the walk-downs,

tagging, and relocation, would be performed by a qualified individual. Tr. at 314. The Staff also provided testimony regarding MDNR's permitting and oversight responsibilities. Mr. Weeks and Mr. Doub testified that they understand DTE to be obligated to obtain a permit from MDNR before implementing aspects of the Mitigation Plan (e.g., relocating snakes) and undertaking other activities that could result in harm to the snake. Tr. at 317-18. In their prefiled testimony, Mr. Weeks and Mr. Doub also explained that, based on the Michigan Natural Resources and Environmental Protection Act of 1995 (Exhibit NRC E17), they expect that DTE would be required to obtain a permit from MDNR before performing building activities that could result in a "taking" of the eastern fox snake. Exhibit NRC E21 at A23. This permit, they testified, would require renewal on an annual basis, so DTE would apply for it closer in time to when activities that may result in a take would begin. *Id*.

58. The Staff also noted aspects of the Wetland Mitigation Program that indicate its technical merit and reliability. Mr. Weeks and Mr. Doub stated in their prefiled rebuttal testimony that potential habitat for relocated snakes would be available contemporaneously, or nearly so, with the disturbance of onsite wetlands because the Wetland Mitigation Plan provides that mitigation activities will commence prior to or concurrent with wetland impacts at the Fermi 3 site. Exhibit NRC E22 at A8. This habitat is, Mr. Doub and Mr. Weeks stated in prefiled testimony, within the historical range of the eastern fox snake, near clusters of historic sightings, and consistent with the eastern fox snake's preferred habitat types. Exhibit NRC E21 at A18. The Wetland Mitigation Plan is a condition of MDEQ's issued wetland permit. Exhibit NRC E21 at A18. In their prefiled testimony, the Staff witnesses testified that the wetland permit issued by MDEQ (Exhibit NRC E16) notes the presence of the eastern fox snake on the Fermi site and reiterates the need for the Applicant to obtain from MDNR appropriate permits regarding the eastern fox snake prior to commencing construction. *Id*. at A23, *citing* Exhibit NRC E16 at 4. Also regarding the Wetland Mitigation Plan, Mr. Doub noted that one of the Wetland Mitigation Plan performance standards requires the soils of the mitigation site to be free of contaminants.

Tr. at 334-35.

59. In their prefiled rebuttal testimony, Mr. Doub and Mr. Weeks summarized other aspects of the Wetland Mitigation Plan that support their mitigation analysis and conclusion on reasonably foreseeable impacts to the eastern fox snake. The baseline conditions of the site were deemed appropriate for wetland creation or restoration based on criteria from the USDA soil characteristics database. Exhibit NRC E22 at A6. The Wetland Mitigation Plan requirement of installing six inches of high quality topsoil on the site would ensure the rapid establishment of vegetative cover that could provide suitable habitat for the eastern fox snake. *Id*. In addition, according to the Staff's prefiled rebuttal testimony, the Wetland Mitigation Plan requires a monitoring program and establishes prescriptive performance standards and corrective actions to ensure success. *Id*. at A7.

60. The Staff also described characteristics of the the eastern fox snake in their oral and prefiled testimony that support their analysis of the eastern fox snake mitigation. Mr. Doub testified that eastern fox snakes are not frequently observed in the field due to their coloring and choice of habitat; therefore, he stated, most scientific literature uses habitat as a metric for population, rather than direct counts of individuals. Tr. at 328. As Mr. Doub testified, one way that the monitoring program in the Mitigation Plan addresses this is requiring the tagging of relocated eastern fox snakes with transponder chips so that the success of the Mitigation Plan and the reintegration of the snakes can be more readily ascertained. *Id*. at 338 (Doub). In response to our question, Mr. Doub explained that, in his opinion, the eastern fox snake is not a "sentinel species," which he defined as a species that can serve as an early warning of potential impacts to other species, but that its presence may indicate the health of certain types of habitats. *Id*. at 332. Mr. Doub and Mr. Weeks testified that their analysis included a broad consideration of the scope of potential impacts to wildlife on the site, such as considering the ecological role of the eastern fox snake in the food chain in arriving at the overall impact conclusion of SMALL to MODERATE. *Id*. at 333. Thus, the Staff's conclusion that LARGE

impacts would not occur is based on an ecologically comprehensive analysis. *Id*. at 327-28 and 333.

61. Mr. Weeks and Mr. Doub testified that the reason for a change in impact assessment to the eastern fox snake (from SMALL in the DEIS to SMALL to MODERATE in the FEIS) was that the Staff chose to apply the same information in a more conservative manner. *Id*. at 344-45. Mr. Doub also testified that this was not an indication that the Staff came to have less confidence in MDNR's capacity to enforce the Mitigation Plan or in DTE's commitment to mitigation. *Id*. Mr. Doub and Mr. Weeks were not aware of whether Michigan law provides a private party with the a legal right to enforce the requirements of the mitigation plans, but Mr. Doub stated that such a party could bring the matter to the attention of the MDNR, MDEQ, or the U.S. Army Corps of Engineers, who are responsible for the oversight of the proposed mitigation. Tr. at 324, 340-41, 343-44. Mr. Doub also noted that the Staff expected that the mitigation measures would be implemented by appropriately qualified personnel. *Id*. at 343.

4. Applicant Testimony

62. Witnesses for DTE provided prefiled and oral testimony that was consistent with and that elaborated on testimony provided by the Staff. Mr. Mifsud provided additional details regarding the Mitigation Plan. Mr. Mifsud agreed with the Staff's characterization of the eastern fox snake as a cryptic species; he provided explanation as to how the design of the Mitigation Plan addresses this quality. *Id*. at 351. In justifying the adequacy of the Mitigation Plan's capture/relocation methodology and its anticipated success, he testified that the numerical eastern fox snake capture and relocation goal was to collect up to 90 percent of specimens during the 6 to 8 weeks prior to any site development activities. *Id*. at 348. He added that the Mitigation Plan includes built-in redundancies to provide for further opportunistic collection one week prior to construction activities. *Id*. Mr. Mifsud explained that the collection methodology would follow particular protocols. *Id*. at 350. He stated that DTE would establish barrier fences in site development areas and employ a capture-per-unit-effort to attain capture goals. *Id*. He

also testified that in order to maximize captures, these actions would occur during the snakes' active season and that DTE would also employ attractant cover types, such as mud and wood objects, plywood, and corrugated metal, to improve collection rates by drawing snakes in. *Id*. at 351.

63. DTE's witnesses also addressed the Applicant's staffing/procedures for the plan and how those would support its implementation. For example, Mr. Westmoreland testified that workers would receive daily briefings prior to conducting work that could potentially impact eastern fox snakes. *Id*. at 349. He also testified that success metrics and the need for corrective actions would be determined by someone within the DTE organization who is identified as DTE's biological subject matter expert, although that individual has not yet been identified. *Id*. at 352-53. Mr. Mifsud noted, however, that MDNR would be engaged with reviewing monitoring reports or identifying the need for corrective actions. *Id*. at 354.

64. The Applicant's witnesses further addressed the role of interactions with MDNR in establishing and ultimately implementing the Mitigation Plan. Mr. Smith testified that DTE would be subject to an annual requirement to obtain a take permit from MDNR, which would ensure that mitigation activities provided ongoing consistency with Michigan law. *Id*. at 357. Mr. Mifsud stated that the annual monitoring program report that would be submitted to MDNR would influence whether MDNR would issue subsequent annual permits. *Id*. at 368-69.

65. Mr. Mifsud and Mr. Westmoreland testified that DTE has interacted with MDNR over several years during the development of the Fermi 3 application and that DTE's development of the Mitigation Plan was in response to MDNR's stated expectation that DTE would be required to apply for an eastern fox snake take permit before engaging in site development. *Id*. at 358-62. Based on these interactions, Mr. Westmoreland testified that he expected that the Mitigation Plan would be a condition of any eastern fox snake take permit issued by the MDNR. *Id*. at 362. Mr. Mifsud stated that MDNR has an enforcement division that issues civil and criminal penalties for noncompliance with a take permit. *Id*. at 363.

66. Regarding the soil quality of the offsite mitigation area, Mr. Westmoreland testified that he does not believe that soil testing for contaminants has occurred yet. *Id*. at 372. But, he stated, he has performed site walkdowns with MDEQ and the U.S. Army Corps of Engineers and they have been satisfied with the site and expressed no concerns regarding contamination. *Id*.

67. Mr. Mifsud testified that DTE seeks to emphasize onsite mitigation in order to keep as many eastern fox snakes on the site as possible, whereas relocating the snakes to the offsite mitigation parcel would be a secondary or tertiary step. *Id*. at 375-76. He stated that he considered the offsite mitigation parcel as best suited to be a secondary relocation site for juvenile eastern fox snakes in order to help expand the population. *Id*. at 376. Mr. Smith noted that much of the Fermi 3 site will not be impacted by building activities and will, therefore, be available to provide primary relocation habitat. *Id*. Mr. Smith also testified that the mitigation activities would be funded through financing for construction. *Id*. at 381.

68. Mr. Westmoreland and Mr. Mifsud stated that they agree with the Staff's conclusion that impacts to the eastern fox snake would be no greater than MODERATE if mitigation were not successfully implemented. *Id*. at 382-83.

5. Intervenors' Arguments

69. As discussed above, the Intervenors provided no oral or prefiled testimony, but instead provided legal arguments relating to NEPA. In their statements of position, the Intervenors argue that the FEIS suffers from analytical uncertainty regarding the enforceability of mitigation commitments and the integrity and suitability of the offsite wetland mitigation site. *See* Intervenors' Direct Presentation at 9-12; Intervenors' Rebuttal Position Statement at 5-8. At the hearing, counsel for Intervenors also argued that there are not adequate assurances in place to conclude that the proposed mitigation would occur, in part because of uncertainty with respect to when DTE would begin construction of Fermi 3 and whether sufficient government resources and staffing would be available at that time to enforce mitigation commitments. *Id*. at

640-41. With respect to this uncertainty, Intervenors speculate that State agencies may be unable to enforce mitigation requirements due to understaffing and lack of funding. *Id*. In response to our question, however, Intervenors' counsel stated that he could not point to any evidence in the record that disagreed with the Staff's FEIS conclusion that potential impacts to the eastern fox snake would, in no case, exceed MODERATE. *Id*. at 641-42.

6. Board Findings

70. The Board finds the Staff's and DTE's prefiled and oral testimony persuasive in supporting the FEIS conclusion that impacts to the eastern fox snake would likely be SMALL, but, even if mitigation were not effectively implemented, would not exceed MODERATE. The Staff's and DTE's testimony provides background on the life history and behavior of the eastern fox snake that supported their explanation of why the Mitigation Plan and the Wetland Mitigation Plan were appropriately designed. For example, as the Staff and DTE witnesses testified, the eastern fox snake is a cryptic species that is difficult to observe in the field due to its natural camouflage and its choice of habitat. As Mr. Mifsud testified, the Mitigation Plan would account for these characteristics by using a barrier system in combination with attractant objects to facilitate the collection and relocation of snakes present in site areas to be disturbed. He also testified that this initial collection would occur 6-8 weeks before site disturbance activities would occur and that the objective was to collect 90 percent of specimens from targeted areas. As the Staff and DTE testified, a worker education program is also included in the Mitigation Plan to maximize the amount of opportunistic capture and relocation of eastern fox snakes during building and development.

71. We accordingly agree that the record supports the conclusion that the mitigation plans are properly tailored to the characteristics of the eastern fox snake, that the mitigation measures are supported by scientific expertise and informed by practical field experience, and that the methods and procedures are well developed to promote proper implementation of the plans. For example, the Staff witnesses explained that once eastern fox snakes have been

captured, they would be tagged with transponder chips to permit monitoring of whether they are successfully adjusting to relocation habitat. DTE witnesses also testified that because large amounts of the Fermi 3 site with suitable habitat will remain undisturbed during site during the building of the plant, onsite relocation is the preferred option. Mr. Mifsud testified that the offsite mitigation habitat would be ideally used as a secondary relocation option for juvenile individuals as part of an effort to expand the population size. However, as the Staff witnesses testified, the offsite mitigation site would provide suitable eastern fox snake nearly contemporaneously with Fermi 3 site disturbance. This is so because, based on USDA soil criteria, the land is appropriate for wetland restoration and because the placement of high quality top soil would enable the rapid growth of vegetative cover. Moreover, as Staff and DTE testified, there is no basis to believe that the offsite mitigation parcel is contaminated; to the contrary, one of the performance standards in the Wetland Mitigation Plan requires soil testing to ensure that no soil contaminants are present. These provisions further reinforce the FEIS's analysis and conclusion that the implementation of the mitigation measures, as well as their effectiveness at minimizing impacts to the eastern fox snake, are reasonably foreseeable.

72. The Board finds that the Staff's approach in analyzing impacts to the eastern fox snake at the regional population level is both reasonable and conservative. The Board finds that the Staff's determination that proposed mitigation would be successfully implemented and that impacts to the eastern fox snake would, therefore, be SMALL is well supported by the evidentiary record. However, the Board also finds that the use of the SMALL to MODERATE impact range to account for the potential impacts if mitigation were not successfully implemented is likewise well explained in the record, is a conservative way to address uncertainty, and is fully consistent with NEPA's "hard look" requirement. In particular, the Board finds appropriate the Staff's assessment under NEPA that DTE would implement the proposed Mitigation Plan and the Wetland Mitigation Plan and that these plans would be enforceable by MDNR or MDEQ. In light of those agencies' responsibilities, their interactions with DTE to date

as reflected in the record, and the applicable provisions of state law identified by the parties, we find it was reasonable for the Staff's analysis to presume that the "take" permit requirements established under the Michigan Natural Resources and Environmental Protection Act would be enforced. In light of those requirements, as well as the thoroughness and reasonable methodology reflected in DTE's proposed mitigation plans, we disagree with the Intervenors that the uncertainty regarding the exact date for commencing building activities calls into question the reasonable foreseeability of DTE's implementation of the mitigation plans. And in any case, the Board finds that the Staff's FEIS fully complied with NEPA by also analyzing a scenario in the event that mitigation is not successfully implemented.

V. CONCLUSIONS OF LAW FOR CONTENTION 8

73. The Board has considered all of the evidence presented by the parties on Contention 8. Based upon a review of the entire record in this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the findings of fact set forth above, which are supported by reliable, probative and substantial evidence in the record, the Board has decided all matters in controversy concerning this contention and reaches the following conclusions.

74. With respect to considering reasonably foreseeable impacts to the eastern fox snake and analyzing reasonable mitigation measures, the FEIS is fully compliant with NEPA's "hard look" requirement.

75. We therefore conclude that, with respect to the issues raised in Contention 8, the FEIS complies with NEPA and with NRC's regulations in 10 C.F.R. Part 51, in that the Staff sufficiently documented its analysis of impacts to the eastern fox snake and reasonable mitigation alternatives. As such, we conclude that Contention 8 in its entirety must be denied.

VI. FINDINGS OF FACT FOR CONTENTION 15

A. Expert Witnesses

80. The parties in this proceeding put forth the testimony of eight witnesses for Contention 15. The Board finds that all of the witnesses are qualified as expert witnesses in the subject matters in which they provided testimony. A summary of the witnesses' professional qualifications is provided below.

1. Staff Expert Witnesses

81. The Staff presented three expert witnesses in its direct and rebuttal testimony. The Staff witnesses are (1) Adrian Muñiz, (2) Aida Rivera-Varona, and (3) George A. Lipscomb. We find that all of the Staff's witnesses are well-qualified as experts in the subject matters in which they provided testimony.

82. Mr. Muñiz is an electrical engineer with eleven years of NRC experience. He has been a Project Manager in the New Reactor Licensing Division of the Office of New Reactors since 2008, and has been the Lead Project Manager for the safety review of the Fermi 3 COLA since June 2010. In that capacity, he is responsible for overseeing preparation of the Staff SER for the Fermi 3 COLA. Mr. Muñiz holds a Bachelor of Science Degree in Electrical Engineering from the University of Puerto Rico and is a graduate of the NRC's Nuclear Safety Professional Development Program.

83. Mrs. Rivera-Varona is a chemical engineer with eleven years of NRC experience. From February 2007 to January 2010, she was a Vendor Inspection Team Leader in Quality and Vendor Branch 2 in the Division of Construction Inspection and Operational Programs, Office of New Reactors. In that capacity, she led a Staff inspection at the Applicant's headquarters in August 2009 that resulted in three cited violations that initially formed the basis for Contention 15. *See* NRC Inspection Report 05200033/2009-201 and Notice of Violation (Oct. 5, 2009) (October 2009 NOV), ADAMS Accession No. ML092740064, submitted in this proceeding as Exhibit NRC S2. In January 2010, Mrs. Rivera-Varona was promoted to

Technical Assistant in the Division of Construction Inspection and Operational Programs in the Office of New Reactors, and she was not involved in the Fermi 3 COLA review after that date. In September 2012, she was promoted to Branch Chief in the Division of Program Management, Policy Development, and Analysis in the Office of New Reactors. Mrs. Rivera-Varona holds a Bachelor of Science degree in Chemical Engineering, *magna cum laude*, from the University of Puerto Rico and is a graduate of the NRC's Nuclear Safety Professional Development Program.

84. Mr. Lipscomb is an electrical engineer with over twenty-five years of experience in the U.S. Navy, in the nuclear industry, and at NRC. Since July 2008, he has worked as a QA Inspector and technical reviewer in the Division of Construction Inspection and Operational Programs in the Office of New Reactors. He was the lead technical reviewer for QA for Chapter 17 of the SER (Exhibit NRC S1), and he was a member of the inspection team for the August 2009 inspection of DTE that resulted in the cited QA violations that underlie Contention 15 (Exhibit NRC S2). Prior to joining NRC, Mr. Lipscomb worked for the General Electric Company on the ESBWR project and for the U.S. Navy in several positions with substantial responsibilities related to QA. Mr. Lipscomb holds a Bachelor of Science Degree in Electrical Engineering from the U.S. Naval Academy, a Master of Science Degree in Electrical Engineering from the University of Michigan, and a Master of Business Administration in Aviation from Embry-Riddle Aeronautical University.

2. Applicant Expert Witnesses

85. The Applicant presented four expert witnesses in its direct and rebuttal testimony: (1) Peter W. Smith, (2) Stanley Stasek, (3) Ronald Sacco, and (4) Steven Thomas. We find that all of the Applicant's witnesses are well-qualified as experts in the subject matters in which they provided testimony.

86. Mr. Smith has been employed by DTE as the Director, Nuclear Development – Licensing and Engineering, since 2007. He has overall responsibility for the Fermi 3 project, including the COLA and other State and Federal permits and approvals. He reports to the

Senior Vice President for Major Enterprise Projects and the Chief Nuclear Officer. He is specifically responsible for the implementation of QA measures for Fermi 3, including management of the corrective action and non-conformance process. He has over thirty years of experience in the nuclear power industry, and he holds a Bachelor of Engineering degree in Chemical Engineering from the Royal Military College of Canada and a Master of Science in Engineering Science from the University of Toledo.

87. Mr. Stasek is employed by DTE as Director, Quality Management, for the Fermi 3 project. In this position, he is responsible for developing and maintaining the Fermi 3 QA program, evaluating compliance with the program, and managing QA organization resources. Mr. Stasek has been employed by DTE since 1997. He was previously employed by the NRC in various capacities, including as a Resident Inspector and Senior Resident Inspector at several nuclear power plants. Mr. Stasek holds a Bachelor of Science degree in Electrical Engineering from Wayne State University and a certificate in nuclear power plant operations from Chattanooga State Technical College. From March 2009 to the present, Mr. Stasek has been a member of the Nuclear Energy Institute's (NEI's) new plant QA Task Force and has directly supported development of revisions to the NEI's QA template in NEI 06-14A.

88. Mr. Sacco is employed by B&V as the Director of Nuclear Quality Assurance for B&V Energy in Overland Park, Kansas. He has been in that position since 2006. In that capacity, he has provided QA and quality management support for nuclear projects including the River Bend, Turkey Point, and Bell Bend COL projects in addition to Fermi 3. He has been employed in the QA field in a variety of capacities for over thirty years. He holds Bachelor of Arts and Master of Arts degrees in Political Science from Boston College and a Juris Doctor degree from the New England College of Law. He is a member of the American Society of Mechanical Engineers' (ASME's) NQA-1 Committee.

89. Mr. Thomas is employed by B&V as an Engineering Manager in Overland Park, Kansas. He has been in that position since 2007 and was responsible for all engineering and

technical activities necessary to develop the Fermi 3 COLA. Since the application was submitted to the NRC, he has been responsible for responding to requests for information and resolving technical issues arising during the regulatory review. He also supported DTE during its meetings on the application with the Advisory Committee on Reactor Safeguards (ACRS). Prior to joining B&V, he advanced to a Principal Engineer/Design Engineering Supervisor at the Prairie Island nuclear station, where he was responsible for all mechanical issues on all assigned projects. He has twenty-nine years of industry experience and a Bachelor of Science degree in Nuclear Engineering from the University of California.

3. Intervenor Expert Witness

90. The Intervenors presented one expert witness, Mr. Arnold Gundersen, in their direct and rebuttal testimony. We find that Mr. Gundersen is well-qualified as an expert in the subject matters in which he provided testimony.

91. Mr. Gundersen is employed as Chief Engineer for Fairewinds Associates, a Vermont-based non-profit dedicated to nuclear energy issues. He has provided expert witness testimony in numerous state and federal proceedings, including the contested proceeding for the North Anna COLA and other proceedings before NRC Licensing Boards. He is a former manager of an NRC-licensed company with expertise in nuclear decommissioning and remediation. He holds a Bachelor of Science degree in Nuclear Engineering and a Master of Engineering degree in Nuclear Engineering, both from Rensselaer Polytechnic Institute.

B. Contention 15A

92. Contention 15 originates with inspection activities carried out by the NRC Staff. The Fermi 3 COL Application was submitted to the NRC on September 18, 2008. In June 2009, the NRC Staff reviewing the Application identified areas requiring clarification within the Applicant's documentation of its QA program in Revision 0 of its COL application. *See* Rivera-Varona Testimony (Test.), Exhibit NRC S22 at A5; Lipscomb Direct Test., Exhibit NRC S23 at A19. Specifically, although the Staff determined that Revision 0 of the COLA included sufficient

information for the Staff to begin its review of the QA program to be applied to the construction and operation of Fermi 3, the Staff determined that Revision 0 did not include sufficient detail on the QA program applied to the design of Fermi 3. Rivera-Varona Test., Exhibit NRC S22 at A5; Lipscomb Direct Test., Exhibit NRC S23 at A19. The Staff's internal discussions regarding this issue were captured in e-mails that have been submitted as exhibits by the Intervenors. Exhibits INTS 002 – INTS 005 & 009. Following internal discussions about how best to proceed, the Staff decided to conduct an inspection in order to resolve its concerns related to QA, and conducted that inspection at the Applicant's headquarters in August 2009. Rivera-Varona Test., Exhibit NRC S22 at A6-A7; Lipscomb Direct Test., Exhibit NRC S23 at A19-A20.

93. Following the August 2009 inspection, the NRC Staff issued an Inspection Report and Notice of Violation (NOV) dated October 5, 2009, that cited DTE for three QA violations. Rivera-Varona Test., Exhibit NRC S22 at A7; Lipscomb Direct Test., Exhibit NRC S23 at A19. The NOV stated that DTE:

> A. failed to establish and implement a Fermi Unit 3 quality assurance (QA) program between March 2007, when the initial contract was placed with Black and Veatch (B&V) for the conduct of safety-related combined license (COL) activities, until February 2008, and retain overall control of safety-related activities performed by B&V;
>
> B. had not completed any internal audits of QA programmatic areas implemented for Fermi 3 COL application activities performed to date; and
>
> C. had not documented trending of corrective actions to identify recurring conditions adverse to quality since the beginning of Fermi 3 project in March 2007.

Exhibit NRC S2. The Staff subsequently withdrew the first of these violations, for reasons described further below in our explanation of the Staff's testimony. However, the Intervenors filed Contention 15 based on the October 2009 version of the NOV and the e-mail discussions that preceded the August 2009 inspection. See Exhibit INTS 007 at 7-8.

94. As admitted by the Board, the first two paragraphs of Contention 15 read as follows:

> Detroit Edison (DTE) failed to comply with Appendix B to 10 C.F.R. Part 50 to establish and implement its own quality assurance (QA) program when it entered into a contract with Black and Veatch (B&V) for the conduct of safety-related combined license (COL) application activities and to retain overall control of safety-related activities performed by B&V. This violation began in March 2007 and continued through at least February 2008. Further, DTE failed to complete internal audits of QA programmatic areas implemented for the Fermi 3 COL Application, and DTE also has failed to document trending of corrective actions to identify recurring conditions adverse to quality since the beginning of the Fermi Unit 3 project in March 2007.
>
> Contention 15A: These deficiencies adversely impact the quality of the safety-related design information in the FSAR that is based on B&V's tests, investigations, or other safety-related activities. Because the NRC may base its licensing decision on safety-related design information in the FSAR only if it has reasonable assurance of the quality of that information, it may not lawfully issue the COL until the deficiencies have been adequately corrected by the Applicant, or until the Applicant demonstrates that the deficiencies do not affect the quality of safety-related design information in the FSAR.

LBP-10-09, 71 NRC at 510-11. The contention also has a third paragraph, labeled Contention 15B, which we discuss separately in Section VI.C below.

95. As shown by the testimony summarized below, all parties agree on certain key facts related to Contention 15A. First, all parties agree that DTE did not have an in-house QA program (i.e., a program established and implemented solely by DTE personnel) in place for Fermi 3 at the outset of the application development project. Lipscomb Direct Test., Exhibit NRC S23 at A25; Exhibit DTE 000015 at A35; Exhibit INTS 068 at A27. Second, all parties also agree that DTE contracted with B&V to perform certain safety-related activities that supported development of the Fermi 3 QA application, and that B&V personnel and subcontractors performed those activities under the B&V QA program rather than under a DTE program. Lipscomb Direct Test., Exhibit NRC S23 at A25; Exhibit DTE 000015 at A37 & A39-43; Exhibit INTS 068 at A27. Finally, all parties agree that the B&V QA program is consistent with the requirements of Appendix B to 10 C.F.R. Part 50. Lipscomb Direct Test., Exhibit NRC S23 at A18 & A25; Exhibit DTE 000015 at A31; Tr. at 395.

96. In ruling on Contention 15A, this Board must therefore concentrate on one primary legal issue and one primary factual issue. The legal issue, which is discussed below in

Section VI.B.5, is whether DTE was required to have an in-house QA program compliant with Appendix B of 10 C.F.R. Part 50 at the time safety-related design activities related to the Fermi 3 COLA were carried out by B&V – that is to say, in 2007 and in 2008 prior to submittal of the Application. The Intervenors argue that DTE was required to have an in-house QA program in place from the outset of application preparation activities, while DTE and the Staff argue that relying on a contractor QA program was permissible at that stage. The factual issue, discussed below in Section VI.B.3, is whether DTE can demonstrate that the absence of an in-house DTE QA program compliant with Appendix B of 10 C.F.R. Part 50 during the pre-application period had no adverse impacts on the quality of the safety-related design information in the FSAR that is based on B&V's tests, investigations, or other safety-related activities. The Intervenors assert that DTE has not demonstrated this, while DTE and the Staff assert that it has done so. For the reasons described below, we agree with the position of the Applicant and Staff on both issues.

1. Background on the Administrative Record for Contention 15A

97. The following section summarizes the parties' testimony on certain background information and relevant exhibits concerning the Staff's process for reviewing the application, DTE's initial preparation of its application, and the scope of this portion of the contention. This information is relevant to the specific issues that follow, and supports the Board findings on those issues.

a. Staff Testimony

98. Written Direct Testimony for the Staff was provided by Mr. Adrian Muñiz, Mrs. Aida Rivera-Varona, and Mr. George A. Lipscomb. Written Rebuttal Testimony was also provided by Mr. Lipscomb. Mr. Muñiz sponsored Chapter 17 of the Staff's Safety Evaluation Report (SER) for Fermi 3 into evidence as Exhibit NRC S1. Muñiz Test., Exhibit NRC S21 at A3. Mrs. Rivera-Varona sponsored the aforementioned Inspection Report and NOV, of which she was the primary author, into evidence as Exhibit NRC S2, and the Applicant's reply dated November 9, 2009, as Exhibit NRC S3. Rivera-Varona Test. Exhibit NRC S22 at A4. In his

Direct Testimony, Mr. Lipscomb indicated that he consulted these three documents, and also introduced additional Staff exhibits as follows: (1) further correspondence related to the Inspection Report and NOV as Exhibits NRC S4-S6; (2) a DTE response to four Requests for Additional Information (RAIs) related to Fermi 3 QA activities as Exhibit NRC S7; (3) an audit report from a 2007 NRC Staff audit of subsurface investigation activities performed by B&V at the Fermi 3 site as Exhibit NRC S8; (4) an inspection report and associated letter from a 2010 NRC Staff vendor inspection of B&V as Exhibit NRC S9-S10; (5) section 17.5 of the NRC Standard Review Plan (SRP), which covers review of QA programs; (6) the Staff SER for the Nuclear Energy Institute's (NEI's) Technical Report NEI 06-14, "Quality Assurance Program Description," and the Staff-endorsed version of that report as Exhibits NRC S12-S13; and (7) an excerpt from the NRC Enforcement Policy as Exhibit NRC S14. Lipscomb Direct Test., Exhibit NRC S23 at A8. In his Rebuttal Testimony, Mr. Lipscomb introduced three additional Staff exhibits, all DTE responses to Staff RAIs related to QA, as Exhibits NRC S18-21. Lipscomb Rebuttal Test., Exhibit NRC S24 at A3.

99. Mr. Muñiz testified in his Direct Testimony that the SER chapter submitted as Exhibit NRC S1 has been submitted to the Advisory Committee on Reactor Safeguards (ACRS), that the ACRS did not have any comments of questions regarding the chapter, and that no substantive changes are expected prior to publication of the chapter as part of the Staff's final SER for Fermi 3. Muñiz Test., Exhibit NRC S21 at A2 & A4.

100. In his Rebuttal Testimony, Mr. Lipscomb testified that almost all safety-related activities completed to date that are potentially related to Contention 15 are pre-application activities related to Contention 15A, with the exception of developing responses to RAIs and inspection findings. Lipscomb Rebuttal Test., Exhibit NRC S24 at A5, citing Exhibit NRC S7. According to Mr. Lipscomb's testimony, the Intervenors have not challenged the QA controls applied to any specific post-application activities. *Id*. Mr. Lipscomb further testified that issues related to the ESBWR design are not relevant to Contention 15 because that design was

developed by General Electric-Hitachi (GEH) under its own Appendix B-compliant quality assurance program. The GEH QA program was reviewed separately by NRC as part of the ESBWR rulemaking under Docket No. 052-010. Therefore, while portions of the Fermi 3 COLA incorporate the ESBWR design control document by reference, these portions of the COLA are not relevant to Contention 15. *Id.*

101. Mr. Lipscomb's Rebuttal Testimony also provided clarification of the RAI process and how it results to changes to an application pending before the NRC. Mr. Lipscomb testified that it is common for an RAI response to include proposed language modifying the Application. Proposed FSAR changes that have been reviewed and accepted by the NRC are incorporated in a COL application as part of these annual updates required by 10 C.F.R. 50.71(e)(3)(iii) , though an applicant can submit revisions more frequently. *Id*. at A8. Mr. Lipscomb testified that the proposed FSAR changes in DTE's RAI responses related to QA have all been incorporated into the Fermi 3 COLA submitted since Revision 0 was filed with the NRC in September 2008. *Id*. at A9.

b. Applicant Testimony

102. Written Direct and Rebuttal Testimony for the Applicant was provided by Peter W. Smith, Stanley Stasek, Ronald Sacco, and Steven Thomas. *See* Exhibits DTE 000015 and DTE 000096. The Applicant also filed Exhibits DTE 000015 – DTE 000095 with its Direct Testimony. Thirty-six of these exhibits are audits and surveillances of work related to the Fermi 3 COLA. Exhibits: DTE 000021 – DTE 000034; DTE 000036 – DTE 000046; DTE000051; DTE 000058 – DTE 000061, and DTE 000079 – DTE 000084. Seven are trend analyses of corrective action reports. Exhibits DTE 000062 – DTE 000068. Six are DTE QA procedures. Exhibits DTE 000052 – DTE 000053, DTE 000055, and DTE 000076 – DTE 000078. Five are the various revisions of the Fermi 3 Quality Assurance Program Description (QAPD) that were submitted to the NRC as part of the Fermi 3 COLA. Exhibits DTE 000049 and 000071 – DTE

000074. In addition, the Applicant submitted eleven exhibits that are duplicates of Staff exhibits. These exhibits, with both Applicant and Staff exhibit numbers, are listed below.

- Exhibit DTE 000035 (same as Exhibit NRC S3) - Detroit Edison Reply to a Notice of Violation 05200033/2009-201-01, 02, and 03 (Nov. 9, 2009).

- Exhibit DTE 000054 (same as Exhibit NRC S7) - Detroit Edison Company Response to NRC Request for Additional Information Letter No. 26, Related to SRP Section 17.5 (May 10, 2010).

- Exhibit DTE 000057 (same as Exhibit NRC S5) - Detroit Edison Company Reply to Notice of Violation 05200033/2009-201-04 (May 26, 2010).

- Exhibit DTE 000084 (same as Exhibit NRC S8) - Letter from Mark S. Lesser, Division of Construction Inspection, NRC, to Douglas R. Gipson, DTE, Audit of Combined License Pre-Application Subsurface Investigation Activities at Fermi (Project No. 757) (Aug. 8, 2007).

- Exhibit DTE 000085 (same as Exhibit NRC S2) - NRC Inspection Report 05200033/2009-201 and Notice of Violation (Oct. 5, 2009) (October 2009 NOV).

- Exhibit DTE 000086 (same as Exhibit NRC S4) - NRC Response to Detroit Edison Reply to a Notice of Violation 05200033/2009-201-01, 02, and 03 and Revised Notice of Violation to Detroit Edison Company (Apr. 27, 2010).

- Exhibit DTE 000087 (same as Exhibit NRC S6) - Nuclear Regulatory Commission Inspection Report 05200033/2009-201 and Revised Notice of Violation to Detroit Edison Company (June 4, 2010).

- Exhibit DTE 000088 (same as Exhibit NRC S12) - Final Safety Evaluation for Technical Report NEI 06-14, “Quality Assurance Program Description,” Revision 9 (July 13, 2010).

- Exhibit DTE 000091 (same as Exhibit NRC S13) - NEI 06-14A [Revision 7], “Quality Assurance Program Description” (August 2010).

- Exhibit DTE 000092 (same as Exhibit NRC S1) - Chapter 17 of the Advanced Safety Evaluation Report (SER) With No Open Items (Oct. 17, 2011).

- Exhibit DTE 000093 (same as Exhibit NRC S11) - Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition (NUREG-0800) (March 2007), Section 17.5.

The Applicant filed two exhibits relevant to an earlier version of the NEI template NEI 06-14 that was referenced in early revisions of the Fermi 3 COLA. Exhibits DTE 000089 – DTE 000090. It also filed a copy of the Nuclear Development QAPD (ND QAPD) that was put in place early in

2008 to control DTE receipt of B&V work product prior to submission of the Fermi 3 COLA. Exhibit DTE 000070. The remaining exhibits filed with the Applicant's direct testimony are correspondence, figures, and other supporting material. The Applicant did not submit additional exhibits with Rebuttal Testimony. However, at the request of the Board, on November 8, 2013, the Applicant submitted Exhibit DTE 000110, excerpts from DTE's contract with B&V, and moved to have it entered into evidence. The Board entered the exhibit into evidence by Order on November 21, 2013. Order (Ruling on Applicant's Additional Exhibits), Nov. 21, 2013 (unpublished).

103. In their Direct Testimony, Mr. Smith and Mr. Stasek testified that a company is not required by NRC regulations to implement an Appendix B-compliant QA program at the time it is preparing a COL application, but must nevertheless conduct activities that are important to safety (particularly safety-related site investigation activities) in a manner such that the quality of information ultimately incorporated into the application can be demonstrated. Exhibit DTE 000015 at A21. They further testified that an applicant for an NRC license must include a description of its QA program in its application. *Id*. at A22.

104. In his Direct Testimony, Mr. Smith testified that the Fermi 3 COL project was initiated in December 2006, and that a project group to oversee preparation of the COL Application was established in April 2007. *Id*. at A24. Mr. Smith and Mr. Stasek further testified that the most important safety-related activities carried out during the period of application preparation were site geotechnical and hydrogeological investigations, seismic analysis, and meteorological analysis. *Id*. at A25. According to Mr. Smith and Mr. Stasek, these are the work activities that had at least the potential to influence the design of safety-related structures, systems, and components, and information incorporated into the COLA addressing these safety-related topics would therefore be developed under controlled processes defined under a QA program. *Id.* Mr. Smith and Mr. Stasek further testified that there are no safety-related design features for the ESBWR reactor design referenced in the Fermi 3 COLA that are site-

specific, and that the safety-related work performed during the preparation of the Application was therefore limited to site characterization. *Id*. at A26-A27.

c. Intervenor Testimony

105. Written Direct and Rebuttal Testimony was provided for the Intervenors by Mr. Arnold Gundersen. See Exhibits INTS 068 and INTS 069. The Intervenors did not file Contention 15 exhibits with their initial testimony. However, the Board subsequently permitted them to file exhibits, and they filed the following exhibits that have been admitted into evidence: (1) the original Inspection Report and NOV that is the basis for the contention as Exhibit INTS 001 (same as Exhibit NRC S2 and Exhibit DTE 000085), and DTE's response thereto as Exhibit INTS 010 (same as Exhibit NRC S3 and Exhibit DTE 000035); (2) a series of internal NRC Staff e-mails from June 2009 as Exhibits INTS 002 – INTS 005 and INTS 009; (3) an affidavit submitted by Mr. Gundersen at an earlier phase of this proceeding as Exhibit INTS 007, (4) a copy of NEI-06-14, Revision 7 as Exhibit INTS 008; (5) Revision 1 of the Fermi 3 QAPD as Exhibit INTS 011 (same as Exhibit DTE 000072); (6) a DTE Nuclear Development decision document as Exhibit INTS 031; and (7) various other exhibits that include testimony and Mr. Gundersen's Statement of Professional Qualifications. The Board admitted the following pre-filed Intervenor exhibits into evidence for Contention 15: Exhibits INTS 001 – INTS 005, Exhibits INTS 007 – INTS 011, Exhibit INTS 031, Exhibits INTS 056 – INTS 063 and Exhibits INTS 063 – INTS 070. Tr. at 300-01. In response to the Intervenors' request at the hearing to admit previously denied Exhibits INTS 034 – INTS 035, Exhibits INTS 037 – INTS 049, and Exhibit INTS 064, the Board instructed the Intervenors that they could file a motion to address the basis for that request and, if so, they should do so "as soon as possible" after the hearing. *Id.* at 650. The Intervenors filed such a motion on December 27, 2013, the Staff and the Applicant filed answers on January 6, 2014, and the Intervenors replied on January 13, 2014. This motion is still pending as of the parties' submission of their proposed findings of fact and conclusions of law.

106. In his Direct Testimony, Mr. Gundersen testified that Appendix B to 10 C.F.R. Part 50 requires an applicant for an NRC license to have an Appendix B QA program in place before filing an application. Exhibit INTS 068 at A15-A17. In his Rebuttal Testimony, Mr. Gundersen expanded on this argument, and claimed that DTE became subject to the requirements of Appendix B on February 15, 2007, when it informed the NRC of its intent to prepare a COL application. Exhibit INTS 069 at A7. According to Mr. Gundersen, DTE agreed that it had that responsibility but did not meet it. *Id*. at A8.

107. In his Direct Testimony, Mr. Gundersen testified that the QA approach DTE used in the Fermi 3 COLA is a deviation from a template developed by the NRC and the Nuclear Energy Institute (NEI), and that an applicant is required to notify the NRC when it deviates from an NEI template. Exhibit INTS 068 at A8. According to Mr. Gundersen, DTE's decision to rely on B&V's QA program is such a deviation, and DTE was required to notify the NRC that this deviation had occurred. *Id*. at A9.

2. Staff Inspection, NOV, and Resolution

108. The following section summarizes factual testimony submitted by the parties in relation to the NRC Staff's August 2009 inspection of DTE and the Inspection Report and Notice of Violation (NOV) that was issued as a result. As noted above, this Inspection Report and NOV is a primary basis for Contention 15A, and this section establishes a chronology of events associated with it.

a. Staff Testimony

109. Mrs. Rivera-Varona testified in her Direct Testimony that, in early June 2009, she was working to develop RAIs to submit to DTE regarding the Fermi 3 QA program and determined that there was a lack of clarity in the way implementation of that program was described in the version of the Fermi 3 COLA being reviewed by the Staff at that time. Rivera-Varona Test., Exhibit NRC S22 at A5. RAIs related to QA were issued to DTE in August 2009; however, Mrs. Rivera-Varona believed that it would also be useful to conduct a QA inspection to

examine DTE documents that were not part of the COL Application. *Id*. On August 18-21, 2009, Mrs. Rivera-Varona led the team of four inspectors, which also included Staff witness George A. Lipscomb, that conducted a QA inspection at DTE headquarters in Detroit, Michigan. *Id*. at A7. Following inspection of DTE documents held at the Detroit office, the Staff issued the October 2009 Inspection Report and NOV, Exhibit NRC S2, which included the three violations described above. *Id*. Mrs. Rivera-Varona also testified that the three violations were designated as Severity Level IV, the least severe of the four levels defined in the Staff's Enforcement Policy, which reflects the Staff's determination that there were no actual safety or security consequences to the violations and that they were not willful. *Id*. Mrs. Rivera-Varona had no involvement with the Fermi 3 COL review after January 2010, and Mr. Lipscomb assumed her responsibilities at that time. *Id*. at A8.

110. Mr. Lipscomb testified in his Direct Testimony that, at the beginning of the Fermi 3 COLA review, the Staff was familiar with applications that had relied on QA programs for their existing plants to develop COL applications for new units. Lipscomb Direct Test., Exhibit NRC S23 at A19. In contrast, DTE indicated that it was creating a new QA program for Fermi 3 that was separate from the existing Fermi 2 program, an approach that might also be used by an applicant for a reactor at a "green field" site that had no existing QA program in place. *Id*. Because this approach was unfamiliar to the Staff at that time, the Staff decided to conduct the August 2009 inspection described in Mrs. Rivera-Varona's testimony to assess the effectiveness of DTE control over current and application development activities. *Id*. The inspection team's findings were as described in Exhibit NRC S2. *Id*. at A20. Mr. Lipscomb provided further explanation regarding the Staff's determination that the violations were Severity Level IV, the lowest severity level for which violations are issued, and explained the factors the Staff considers when determining severity levels under NRC's Enforcement Policy, Exhibit NRC S14. *Id*. at A21.

111. Mr. Lipscomb further testified that in DTE's November 9, 2009, response to the Inspection Report and NOV, found in Exhibit NRC S3, DTE challenged the violations in part because they included activities carried out before submittal of the Fermi 3 COLA in September 2008. *Id*. at A22. The NRC Staff agreed that activities occurring before September 18, 2008, were not subject to NRC enforcement actions such as NOVs, and in April 2010 issued a new version of the Inspection Report and NOV, Exhibit NRC S4, that removed reference to activities occurring before submittal of the Fermi 3 COLA. *Id*.

112. Mr. Lipscomb also testified that DTE sent a response to the revised NOV in May 2010, Exhibit NRC S5. *Id*. at A23. The Staff reviewed that response, together with RAI responses that DTE also submitted in May 2010, Exhibit NRC S7, in order to determine that all post-application issues related to DTE's contracting with B&V were resolved. *Id*. The Staff issued a letter closing the NOV, Exhibit NRC S6, on June 4, 2010. *Id.* Mr. Lipscomb further testified that the NRC Staff has not identified any post-application QA issues other than those identified in the revised NOV that has been resolved and closed. *Id*. at 24.

113. Mr. Lipscomb testified that the Staff used RAIs, which are a standard part of the NRC licensing process, to resolve those pre-application QA issues that were not resolved through the enforcement process and closure of the revised NOV. *Id*. at A25.

b. Applicant Testimony

114. Mr. Smith and Mr. Stasek also provided extensive testimony regarding the Inspection Report and NOV discussed by the Staff in its testimony above. Exhibit DTE 000015 at A62-A69. Their testimony generally agreed with the sequence of events described in the Staff's testimony and included references to the same exhibits. However, DTE's testimony included additional information concerning the corrective actions DTE undertook to correct the violations identified in NOV, including vendor qualification (*id*. at A65), audits (*id*. at A67), and trend reports (*id*. at A68).

c. Intervenor Testimony

115. In his Direct Testimony, Mr. Gundersen also took note of the Inspection Report and NOV and of DTE's response thereto. Exhibit INTS 068 at A10-A11. Mr. Gundersen also referred to an affidavit he submitted at an earlier stage of this proceeding, Exhibit INTS 007, which in turn referenced a series of internal Staff e-mails sent in June 2009, Exhibits INTS 002 – INTS 005 and INTS 009, that discussed the Staff's initial views of DTE's description of QA in the Fermi 3 COLA. *Id*. at A9 & A22; *see also* Tr. at 409, 413-14, 426, 440, 443, 458, 460, and 463. In his earlier affidavit, Mr. Gundersen claimed that these e-mails indicate that NRC acknowledges DTE's failure to comply with QA regulations, and he asserted that this failure calls the quality of the Application into question. At hearing, Mr. Gundersen testified that he considered the language of the NOV issued to DTE to be "vague," and that he considered the internal Staff e-mails from June 2009 to be an accurate representation of the QA issues related to Fermi 3. Tr. at 440.

d. Board Findings

116. The Board finds that the parties are in broad agreement about the sequence of events related to the October 2009 Inspection Report and NOV, entered into evidence as Exhibit DTE 000085 and Exhibit NRC S2. Mrs. Rivera-Varona's testimony for the NRC Staff indicates that issues with the Fermi 3 QA program were identified by Staff reviewers in June 2009. Rivera-Varona Test., Exhibit NRC S22 at A5. Staff reviewers discussed these issues internally, as evidenced by Exhibits INTS 002-005 and 009, and ultimately decided to conduct an inspection at DTE headquarters in August 2009 to examine documents not submitted to the NRC with the Fermi 3 COLA. The inspection team included Staff witnesses Aida Rivera-Varona and George A. Lipscomb, and their findings following the inspection were set forth in the October 2009 Inspection Report and NOV and explained in their testimony. We find no basis for Mr. Gundersen's assertions that internal Staff e-mails send in June 2009, before the Staff's August 2009 inspection of DTE, are a more accurate reflection of events than the actual

Inspection Report and NOV issued after more information was obtained in the course of that inspection. The sequence of events leading to resolution and closure of the NOV are described extensively in Staff and Applicant testimony, and the Intervenor has provided no testimony or other evidence that would challenge these facts. The record thus fully supports the Applicant and Staff position that the violations cited by the NRC Staff have been resolved.

117. However, we note that the NOV was revised to eliminate references to activities occurring before the Fermi 3 Application was submitted to the NRC on September 18, 2009. *See* Exhibit NRC S4. For this reason, resolution of the NOV does not resolve questions in Contention 15A related to pre-application activities. These are the subject of Section VI.B.3. Additional detail regarding the corrective actions taken to resolve the post-application violations identified in the revised NOV, and why we ultimately conclude the record supports the position of the Applicant and Staff regarding the adequacy of post-application QA, is provided below in the section on Contention 15B, Section VI.C below.

3. Resolution of Questions Concerning Pre-Application Activities

118. The following section summarizes factual testimony submitted by the parties in relation to pre-application activities, in particular sub-surface investigations carried out by B&V in support of COL Application development.

a. Staff Testimony

119. In his Direct Testimony, Mr. Lipscomb testified that DTE's May 2010 RAI responses, Exhibit NRC S7, provided a detailed summary of how all Fermi 3 safety-related activities completed or in process prior to September 18, 2008, were subject to QA controls consistent with the requirements of Appendix B. Information submitted by DTE in response to RAIs included the list of safety-related activities performed during the pre-application period and the QA programs under which they were controlled, a list of the DTE and B&V personnel with QA responsibilities for these activities, and a list of QA procedures related to pre-application activities. Lipscomb Direct Test., Exhibit NRC S23 at A25, citing Exhibit NRC S7.

120. Mr. Lipscomb further testified that one RAI that DTE answered in the May 2010 response required DTE to provide (1) a "description of how the applicant will retain responsibility for, and maintain control over, those portions of the QA program delegated to other organizations"; (2) the "identification of the responsible organization and the process for verifying that delegated QA functions are effectively implemented'; (3) the identification of major work interfaces for activities affecting quality"; and (4) a "description of how clear and effective lines of communication between the applicant and its principal contractors are maintained to assure coordination and control of the QA program." *Id.*, citing Exhibit NRC S7. Mr. Lipscomb testified that DTE provided the requested information for the periods January 2007 to November 2007 (development of COLA work product by B&V); November 2007 to September 2008 (receipt, review, and acceptance of COLA work product by DTE); and September 2008 to present (post-Application activities). *Id.*, citing Exhibit NRC S7, Attach. 4. According to Mr. Lipscomb's testimony, the Staff reviewed DTE's response to these RAIs, with a focus on the relationship between DTE and its contractor B&V for the three periods noted above, and concluded that B&V's development of the information in the Fermi 3 COLA was carried out under a QA consistent with Appendix B requirements. The Staff therefore concluded that the information in the COLA is reliable and that the QA implementation violations in the revised NOV "do not affect the quality of safety-related design information in the FSAR," contrary to the Intervenors' claims in Contention 15A. *Id*., citing Exhibit NRC S1 at 17-34 to 17-36.

121. Mr. Lipscomb further testified that, in February 2008, DTE established portions of an Appendix B QA program related to review and acceptance of the B&V COLA work product by creating the Nuclear Development QAPD (ND QAPD) and related implementing procedures. He testified that the RAI responses show that all activities related to DTE's review and acceptance of B&V work product occurred after February 2008 and were controlled under the ND QAPD. Mr. Lipscomb testified that the ND QAPD, in addition to controlling work by DTE personnel, also provided additional DTE oversight over B&V, beyond the contractual oversight

mechanisms established initially. *Id.*, citing Exhibit NRC S1 at 17-35.

122. Mr. Lipscomb further testified that the NRC performed two audits/inspections of B&V's QA program and found it to be consistent with the requirements of Appendix B. The first of these took place in July 2007, while subsurface investigations for Fermi 3 were taking place, and focused on pre-application subsurface investigation activities performed by B&V for DTE. The NRC audit team "reviewed the Black and Veatch quality assurance measures being applied to the work" and concluded that the "drilling and field testing activities were controlled by adequate procedures and standards with an appropriate level of supervisory and quality assurance oversight," and "the work was being done in an appropriately controlled manner." *Id*. at 26, citing Exhibit NRC S8. The second of these was a routine inspection of B&V's QA program under the NRC's vendor inspection program. This inspection, which took place in September 2010, was not limited to activities related to the Fermi 3 COLA, but also included B&V work in support of other NRC applicants and licensees. No violations of Appendix B requirements were found during this inspection. *Id*., citing Exhibit NRC S9.

b. Applicant Testimony

123. All four Applicant witnesses testified that, from the outset of the Fermi 3 COLA development project, DTE contracted with B&V for the application development work. Under the contract, DTE delegated to B&V the responsibility for establishing and executing a QA program for the B&V scope of work on the project. Fermi 3 is a corporate initiative conducted independent of the operating Fermi unit (Fermi 2) and does not rely on the Fermi 2 QA program. Exhibit DTE 000015 at A28. The one exception is the meteorological data supporting the Fermi 3 COLA, which was obtained from the Fermi 2 meteorological tower that operates under the Fermi 2 QA program. *Id*. at A37. Mr. Smith further testified that DTE accepted bids for this work only from companies that were established in the nuclear services business and that had Appendix B QA programs in place for use on the project. *Id*. at A30.

124. All four witnesses further testified that delegation is explicitly permitted in 10 C.F.R. Part 50, Appendix B. Further, the Applicant's witnesses noted that the Statement of Considerations (SOC) for a Part 52 rulemaking in 2007 specifically explained that services (*e.g.*, geologic or seismic analyses) that are safety-related and could be relied upon in the siting, design, and construction of a nuclear power plant, are to be treated as basic components as defined in 10 C.F.R. Part 21, which requires that they be purchased as basic components, from a service provider with an Appendix B to Part 50 QA program, as well as its own Part 21 program, or the applicant could dedicate the service in accordance with Part 21, which requires the dedication process itself to be controlled under an Appendix B QA program. According to the Applicant's witnesses, DTE followed the former approach, purchasing the services from B&V, which had its own Appendix B program. *Id*. at A29, citing "Licenses, Certifications, and Approvals for Nuclear Power Plants; Final Rule," 72 Fed. Reg. 49,352, 49,424 (August 28, 2007). The witnesses further testified that DTE maintained overall responsibility for B&V's work during the pre-application period through contract mechanisms, direct management oversight and supervision of B&V work activities, and establishment of the Nuclear Development QAPD (ND QAPD) to control receipt of B&V work product. *Id*. at A30. Mr. Smith also testified that DTE obtained the services of an owner's engineer to assist with activities including QA and contractor oversight. *Id*. at A34.

125. Mr. Smith and Mr. Thomas testified that the geological, hydrogeological, and seismic information in the Fermi 3 COLA was developed from borings and test wells at the Fermi site completed by B&V and its subcontractors between April and September 2007. *Id*. at A37. All four witnesses testified that the quality of this work was assured by several mechanisms. First, the B&V QA program included specific work controls, training for personnel and subcontractors, and QA oversight functions. Second, DTE personnel and its owner's engineer provided an additional level of QA oversight. Finally, the NRC performed a QA audit of B&V onsite activities during this period. According to the witnesses, this approach involved both

controls implemented by B&V as it did the work and oversight – on a sample basis and based on record reviews and personal observations – by other organizations. *Id*. at 38.

126. The Applicant's witnesses testified at length concerning the details of the B&V QA program and the oversight provided by other organizations. *Id*. at 39-46. This discussion cited to audits and surveillances submitted as exhibits in this proceeding. *See* Exhibits DTE 000021 – DTE 000029. Mr. Smith and Mr. Thomas testified that DTE personnel did not conduct formal audits of B&V during the initial phase of site characterization activities in 2007. However, DTE personnel maintained a presence on site to oversee the activities, and formal audits were conducted by an Owner's Engineer contracted by DTE to augment DTE personnel. Exhibit DTE 000015 at A48-A50. This discussion cited to audits and surveillances by the Owner's Engineer submitted as exhibits in this proceeding. *See* Exhibits DTE 000041 – DTE 000046.

127. Mr. Smith testified that DTE's Owner's Engineer was based at the Ann Arbor office of B&V, which is organizationally separate from the B&V office in Overland Park, Kansas, that performed work in support of COL development. Exhibit DTE 000015 at A51. According to Mr. Smith, the Owner's Engineer contract was separate from the contract with B&V Overland Park, and the Owner's Engineer reported directly to the DTE Nuclear Management organization in order to insure independence from B&V personnel performing COL development work. *Id*.

128. Mr. Smith and Mr. Thomas further testified that in May 2007, DTE informed the NRC that the B&V QA program would be used to govern subsurface investigations at the Fermi 3 site. *Id*. at A52, citing Exhibit DTE 000047. Following this notification, the NRC conducted its audit of B&V's onsite activities in July 2007, and concluded that B&V's work was being performed in an appropriately controlled manner. *Id*., citing Exhibit DTE 000084 (same as Exhibit NRC S8).

129. Mr. Smith and Mr. Thomas testified that DTE's receipt of B&V work product took place between February and September 2008 and was controlled under the ND QAPD. *Id*. at A53. DTE employees were trained on approved procedures, or Standard Work Instructions,

and reviewed B&V's work against appropriate regulatory guidance and other references. *Id*. at A54. All B&V work product was reviewed by DTE personnel after the ND QAPD was in place. *Id*. at A55.

130. Mr. Smith and Mr. Stasek testified that DTE established an in-house QA manager, the Nuclear Development QA Manager, in March 2008. *Id*. at A56. DTE thereafter conducted a surveillance of B&V for the COL Chapter Review Process from April 29 to May 6, 2008, and concluded that B&V had followed appropriate procedures to produce quality input to the Fermi 3 Application. *Id*. at A57, citing Exhibit DTE 000036. In June 2008, DTE also performed a surveillance of B&V storage and chain of custody controls of geotechnical core drilling and subsurface samples for Fermi 3 COL project work. This included a review of a complete core boring document package obtained from B&V Overland Park. Overall storage, handling, and custody controls for handling of core drilling and subsurface samples, including records and personnel practices, were found to be adequate with no problems noted. *Id*., citing Exhibit DTE 000037. Mr. Smith, Mr. Thomas, and Mr. Sacco also testified that B&V conducted a surveillance of activities associated with the preparation of the Fermi 3 COLA in September 2008. *Id*. at A58, citing Exhibit DTE 000040.

c. Intervenor Testimony

130. Mr. Gundersen's primary argument concerning delegation of QA implementation to B&V is that such delegation is legally impermissible, and that DTE was required to implement its own Appendix B QA program throughout the pre-application period. Exhibit INTS 068 at A11-A15; Exhibit INTS 069 at A6-A11. This argument is discussed at greater length in Section VII, Conclusions of Law, below. However, Mr. Gundersen also provided testimony on several factual issues that are summarized here.

131. In his Direct Testimony, Mr. Gundersen made two claims of fact related to B&V's subcontracting of the Fermi 3 site characterization work. First, Mr. Gundersen testified that the Fermi 2 QA program was used, but that Fermi 2 did not appear on the list of approved vendors

for geotechnical work. Exhibit INTS 068 at A19. Second, Mr. Gundersen testified that B&V used non-nuclear subcontractors to perform safety-related work. *Id*. at A20.

132. As noted above, Mr. Gundersen's testimony also refers to an affidavit he submitted at an earlier stage of this proceeding, Exhibit INTS 007, which in turn referenced a series of internal Staff e-mails sent in June 2009, Exhibits INTS 002 – INTS 005 and INTS 009, that discussed the Staff's initial views of DTE's description of QA in the COLA. *Id*. at A9 & A22; *see also* Tr. at 409, 413-14, 426, 440, 443, 458, 460, and 463. In his earlier affidavit, Mr. Gundersen claimed that these e-mails indicate that NRC acknowledges DTE's failure to comply with QA regulations, and that this failure calls the quality of the Application into question.

133. At hearing, Mr. Gundersen testified that B&V had a QA program consistent with Appendix B, and that B&V's work was done under this program. Tr. at 395, 425. Mr. Gundersen also testified that he was primarily concerned with the subsurface investigations conducted at the Fermi 3 site, and that he was not concerned with the meteorological data. Tr. at 406. Mr. Gundersen testified that his

> biggest concern is the structural logs of data that was collected onsite. Specifically, when you do a boring the qualifications of the people doing the boring are obviously important. The raw core itself, the integrity of that core is important. Where that core is stored and how it's transmitted to the storage location is important. And how it's accessed and analyzed after the fact and when it's pulled out of storage is also important.

Tr. at 435. This work was begun in 2007 and carried forward into 2008. *Id*.

d. Board Findings

134. Testimony from all three parties confirms that, at all time periods with which the contention is concerned, B&V had a QA program consistent with Appendix B to 10 C.F.R. Part 50 in place to control its work on the Fermi 3 COLA. DTE's witnesses testified that B&V was selected as the contractor for the project in part because it had an Appendix B QA program in place. At the Board's request, DTE has submitted excerpts from the contract in question, and these confirm that contract documents specified that B&V would follow an Appendix B QA

program and stated that geotechnical subsurface investigations would be performed under B&V's Nuclear Quality Assurance Program. Exhibit DTE 000110 at 8. Furthermore, there is agreement among the three parties that DTE did not have an in-house QA program in place when it first contracted with B&V, and that it first established an in-house program in February 2008 when the ND QAPD was put in place. This QA program governed DTE receipt of B&V work product until the Fermi 3 COLA was submitted to the NRC in September 2008, at which time it was superseded by the QA program in the Fermi 3 application. There are no disputes among the parties concerning these factual issues, and the Board finds that those undisputed facts are supported by the record.

135. Because the nature of the B&V QA program is not in dispute, we will focus on the measures taken by DTE and other parties to ensure that the B&V QA program was implemented properly and that the information B&V developed for the Fermi 3 COLA was reliable. To present our findings most efficiently, we divide the pre-application period into the period prior to February 2008, when DTE had no in-house QA program in place, and the period after the ND QAPD was put into place in February 2008. Furthermore, although we agree with the Applicant and Staff that the record does not indicate any unresolved deficiencies in B&V or DTE's QA programs with respect to any pre-application safety-related activities, Mr. Gundersen testified that his concern is subsurface geotechnical investigations and does not extent to other pre-application activities; accordingly, to resolve this portion of the contention we need only reach findings with respect to the implementation of QA for the subsurface geotechnical investigations.

136. Onsite geotechnical work for Fermi 3 began in 2007, as all three parties agree. According to the schedule DTE sent to the NRC on May 31, 2007, onsite monitoring wells were constructed between April and June 2007, with core boring and geotechnical investigations to follow from late June 2007 to mid-August of that year. *See* Exhibit DTE 000048. DTE informed the NRC at that time that it would be relying on B&V's QA program for this work. The parties

have provided extensive evidence of audits, surveillances, and direct observation of B&V as it performed this work that, taken together, provide confidence that B&V conducted its work prior to February 2008 according to the provisions of its own QA program and the terms of its contract. We summarize these below.

137. As DTE testified, B&V performed a number of audits and surveillances of pre-application activities in 2007. These included an internal audit of B&V's nuclear QA program; surveillance of activities on the Fermi 3 site (including handling of core samples); and surveillances of subcontractors performing drilling, laboratory, soil testing, and geological/seismological/geotechnical services. *See* Exhibit DTE 000021; Exhibits DTE 000024 & DTE 000028; and Exhibits DTE 000023, DTE 000026, DTE 000027, and DTE 000029, respectively. These audits and surveillances occurred between April and September 2007.

138. These audits and surveillances are discussed in the May 2010 RAI responses by which DTE provided information on pre-application activities to the NRC. *See* Exhibit NRC S7 (same as Exhibit DTE 000054), Attach. 1 at 5, 7-11. The May 2010 RAI responses also describe the various B&V subcontractors and the QA programs under which they worked during the pre-application phase, and specified that they would do their work under continuous observation by B&V personnel. *Id*. at 6-7. B&V presented this plan to DTE on March 28, 2007. *Id*. at 7.

139. In its written testimony, DTE testified that it maintained a presence on site while subsurface investigations were performed by B&V and its subcontractors. At hearing, Mr. Smith clarified this statement by testifying that he and another DTE manager shared that responsibility, and that one of them was present at all times when subsurface investigation work was occurring on the Fermi 3 site. Tr. at 487-89, 491-93.

140. Both the NRC Staff and DTE testified that the NRC conducted an audit of B&V onsite activities in July 2007. Exhibit NRC S8 (same as Exhibit DTE 000084). This audit

examined the B&V QA program as implemented and found it to be in compliance with Appendix B.

141. In addition to the various onsite audits, surveillances, and direct observation of B&V's subsurface investigation work, DTE testified that in June 2008, DTE personnel also performed a surveillance of B&V storage and chain of custody controls of geotechnical core drilling and subsurface samples for Fermi 3 COL project work. This included a review of a complete core boring document package obtained from B&V Overland Park. Overall storage, handling, and custody controls for handling of core drilling and subsurface samples, including records and personnel practices, were found to be adequate with no problems noted. Exhibit DTE 000015 at A57, citing Exhibit DTE 000037. Although this surveillance took place after the ND QAPD was in place, it involved examination of records related to samples taken prior to February 2008 and is therefore relevant to our finding here that QA controls for activities during that period were properly implemented.

142. The Board finds that primary QA activities during the period prior to February 2008 were properly carried out by B&V under its QA program, and that the various audits, surveillances, and direct observation performed by B&V personnel, the NRC Staff, and DTE together support the conclusion that B&V in fact implemented its QA program as specified in its contract with DTE and consistent with Appendix B.

143. Concerning Mr. Gundersen's two factual assertions about pre-application work – use of the Fermi 2 QA program and work by subcontractors under non-nuclear QA programs – we find that the evidentiary record contradicts Mr. Gundersen's claims. At hearing Mr. Smith testified that, aside from the use of data gathered from the Fermi 2 meteorological tower under the Fermi 2 QA program, the Fermi 2 QA program was not used for onsite investigations. Fermi 2 programs were employed for access control and security in the owner-controlled area and for general industrial safety, but not for QA related to subsurface investigations. Tr. at 489-91. Additionally, the record of this proceeding indicates that B&V subcontractors performing safety-

related work did that work under B&V's QA program unless they had their own QA program compliant with Appendix B, and the record thus supports the conclusion that all such work was indeed performed in accordance with Appendix B requirements. *See* Exhibit NRC S7 (same as Exhibit DTE 000054), Attach. 1 at 5, 6-7. These two factual issues raised by Mr. Gundersen are thus without merit.

144. Accordingly, for the period from the beginning of the Fermi 3 project through February 2008, the Board finds that DTE did not have an in-house QA program in place to control subsurface investigation work, but delegated that work to B&V which performed it under the B&V QA program. This delegation was documented in B&V's contract with DTE, and the NRC Staff was informed that this delegation was taking place. B&V's performance under that contract, including the performance of B&V's Appendix B QA program, was verified by audits, surveillances, and direct observation as described above.

145. We now turn to the second portion of the pre-application period, after the ND QAPD was put into place in February 2008. The parties have all testified that DTE established the ND QAPD in February 2008 and hired its own QA manager in March 2008. The ND QAPD itself is part of the evidentiary record of this proceeding as Exhibit DTE 000070. Both DTE and the Staff have testified that the ND QAPD was in place before DTE began to accept work product from B&V, and the Intervenors have not disputed this testimony. The Board therefore finds that the ND QAPD provided QA controls applicable to all receipt of B&V work product by DTE during the pre-application period.

146. The Intervenors have not alleged any problems with the process by which DTE began to review and accept B&V work product after February 2008. Rather, their primary concern is that the ND QAPD was not in place sooner, when the raw data underlying the B&V work product related to subsurface investigations was collected in 2007. Indeed, Mr. Gundersen testified for the Intervenors that he believed portions of the DTE QA program were consistent with Appendix B once they were put in place. Tr. at 433. Witnesses for the Applicant

testified that DTE maintained internal QA procedures under the ND QAPD and provided training for its employees on the use of these procedures between February and September 2008. Exhibit DTE 000015 at A54. And no party has presented evidence indicating that there were QA problems related to the work done by DTE in-house personnel during this period. Accordingly, the Board finds that the ND QAPD provided appropriate QA controls over the work of DTE employees as they performed activities related to receipt of B&V work product and incorporation of that work product into the COLA.

147. Once the ND QAPD was put in place, DTE began to carry out its own audits of B&V. The first of these, which addressed the chapter review process for the COL Application, took place in May 2008 and reached a conclusion that there were no QA problems related to COL inputs provided by B&V. The second of these, which took place in June 2008, was an audit of storage and handling of core samples related to subsurface investigations, and therefore addressed the concerns Mr. Gundersen expressed at hearing regarding these issues. These audits are described in the May 2010 RAI responses that all parties reference in their testimony. *See* Exhibit NRC S7 (same as Exhibit DTE 000054), Attach. 1 at 14. We find that these audits, in addition to those performed by B&V and by the NRC Staff, provide additional confirmation that work performed by B&V during the pre-application period was performed under appropriate QA controls.

4. Resolution of Board Questions Concerning NQA-1

148. On October 25, 2013, the Board issued an order admitting two Board exhibits into evidence as Exhibit BRD-001 and Exhibit BRD-002. Order (Admitting Board Exhibits 001 and 002), Oct. 25, 2013 (unpublished). The first of these, Exhibit BRD-001, is an American Society of Mechanical Engineers (ASME) document entitled NQA-1–1994, "Quality Assurance Requirements for Nuclear Facility Applications." The second, Exhibit BRD-002, is the ASME document entitled NQA-2–1989, "Quality Assurance Requirements for Nuclear Facility Applications." Because these two documents were admitted after the parties filed their written

testimony, the Board questioned the parties about their applicability to the Fermi 3 review at the evidentiary hearing on October 30 and 31, 2013.

149. ASME NQA-1 is a well established consensus industry QA standard that provides detailed instructions to applicants on how to meet higher-level regulatory requirements. See Lipscomb Direct Test., Exhibit NRC S23 at A17. At hearing, Mr. Sacco testified that NQA-2, admitted into evidence as Exhibit BRD-002, has been incorporated into the 1994 revision of NQA-1, and that NQA-1-1994 therefore supersedes NQA-2. Tr. at 573-74. The Board has examined the 1994 revision of NQA-1 and determined that Mr. Sacco is correct. Part I of NQA-1-1994, "Basic Requirements and Supplementary Requirements for Nuclear Facilities," is a revision to earlier versions of NQA-1. Part II of NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," is a revision to earlier versions of NQA-2, which used to be a separate document but which was incorporated into the 1994 revision of NQA-1. We will therefore refer to NQA-1 for the discussions that follow.

150. We will discuss Part I of NQA-1 in relation to our ruling on Contention 15B below. In this section, we focus on Part II, and in particular on Subpart 2.20, "Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants." The parties offered testimony at hearing concerning the provisions of Subpart 2.20 and how DTE met them for the subsurface investigations performed at the Fermi 3 site in 2007. We conclude that the Applicant has demonstrated that the subsurface investigations performed during the pre-application period were subject to QA controls consistent with the provisions of Subpart 2.20 of NQA-1.

a. Intervenor Testimony

152. At hearing, Mr. Gundersen testified for the Intervenors that NQA-1, Exhibit BRD-001, requires that activities related to preparation of a COL application must be conducted under the QA control of the organization ultimately applying for an NRC license, in this case DTE. Tr. at 406. Mr. Gundersen testified that the most important work done on this project was the subsurface investigations carried out in 2007. Tr. at 407, 412. He asserted that he did not

believe DTE could demonstrate that the subsurface investigations were performed in a manner consistent with NQA-1 unless it had an in-house QA program in place in 2007, when the subsurface investigations were conducted. Tr. at 410.

b. Applicant Testimony

153. At hearing, Mr. Smith testified for DTE that, from the beginning of the Fermi 3 project, DTE's intent was to obtain the services of a contractor with an appropriate QA program to conduct subsurface investigations at the Fermi 3 site. Tr. at 470-71, 550. Mr. Smith further testified that this approach did not conflict with NQA-1 because DTE applied a program that met the NQA-1 requirements, specifically the B&V program, to the subsurface investigations. Tr. at 471-72. According to Mr. Smith, DTE maintained overall responsibility for B&V's work product, which is exercised through contract mechanisms, review and approval of B&V's geotechnical investigation plan, and onsite observation of B&V activities. Tr. at 472-73. DTE's Owner's Engineer also provided oversight. Tr. at 473. According to Mr. Smith, this approach was sufficient to demonstrate that B&V's work was performed consistent with NQA-1.

154. Mr. Sacco of B&V, testifying for DTE, stated that B&V's QA program and associated procedures are consistent with both Appendix B and NQA-1. Tr. at 494-95, 546. Mr. Sacco testified that the B&V program includes internal oversight to ensure compliance with NQA-1, regardless of the frequency of client audits. Tr. at 546-47. Mr. Sacco further testified that he is a member of the ASME committee that writes, revises, and interprets NQA-1, that he is personally familiar with its requirements, and that he personally reviewed and approved B&V's procedures to ensure that they are consistent with NQA-1. *Id*.

c. Staff Testimony

155. Mr. Lipscomb testified for the Staff that NQA-1 specifies that a QA program must include oversight. Tr. at 581. According to Mr. Lipscomb, this oversight was provided in the Fermi 3 case by contractual mechanisms ensuring the use of an Appendix B QA program, by hiring an Owner's Engineer, by performing surveillances, and by implementing the ND QAPD to

control DTE's receipt of B&V work product. Tr. at 582-83. According to Mr. Lipscomb, a full in-house DTE QA program was not necessary to provide sufficient oversight of B&V's work during the pre-application period. Tr. at 582.

d. Board Findings

156. The Board agrees with both Mr. Gundersen and Mr. Thomas that, in the context of determining which entities are subject to NQA-1's provisions, NQA-1 does not use the term "applicant" that is found in NRC regulations. *See* Tr. at 410, 471. The Board also notes that Part I of NQA-1 employs its own terminology regarding the different organizations that may be involved in preparing an application for a nuclear power plant. Specifically, it identifies an "owner" as the person, group, company, agency, or corporation who has or will have title to the nuclear power plant, and a "supplier" as "any individual or organization who furnishes items or services in accordance with a procurement document." Exhibit BRD-001, Section I.4. NQA-1 explains that "supplier" is "[a]n all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their subtier levels." *Id*. However, NQA-1 states that these definitions are applicable to Part I of the document, and does not apply them to Part II where the provisions of Subpart 2.20 regarding subsurface investigations are found. *Id*.

157. Part II of NQA-1, formerly NQA-2, uses much more general language when discussing the use of services procured under contract. Part II specifies that

> An appropriate Quality Assurance Program, based on the nature and scope of the work to be performed and the relative importance of the items or services, shall be specified in contractual documents by selective applications of portions of Part I, Basic and Supplemental Requirements, for programmatic activities and of this Part (Part II) for work oriented activities.

Exhibit BRD-001 at Section II.2. Part II of NQA-1 further specifies that "[t]he organization invoking this Part (Part II) shall be responsible for specifying which section, or portions thereof, apply and appropriately relating them to specific items and services," and that "[t]he organization upon which this Part (Part II**),** or portions thereof, is invoked shall be responsible for complying

with the specified requirements." *Id*. at Section II.3. We agree with the Applicant and Staff that the most reasonable reading, given the facts of this case, is to interpret "the organization invoking" Part II as DTE, and "the organization upon which this Part . . . is invoked" as B&V.

158. Subpart 2.20 of Part II of NQA-1, "Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants, contains additional language regarding its applicability:

> *The requirements of Subpart 2.20 apply to the work of any organization or individual participating in subsurface geotechnical investigations* such as drilling, coring, sampling, trenching, logging, geophysical methods, or testing or in interpreting results of subsurface investigations. Subpart 2.20 is intended to apply to any of these activities which will be used to formulate design bases for the plant. The extent to which the individual requirements of Subpart 2.20 apply will depend upon the nature and scope of work to be performed and the importance of the item or service involved.

Exhibit BRD-001, Subpart 2.20, Section 2 (emphasis added). For most activities, Subpart 2.20 does not attempt to specify which organization must complete a specific task, except for those sections that make specific reference to the organization doing the actual work. *See, e.g., id*. at Sections 4.1, 5.1, & 6.1. Subpart 2.20 does refer to surveillances as a necessary component of subsurface investigations; however, it does not specify that these must be performed by an organization who would meet the Part I definition of "owner." *See, e.g., id*. at Sections 3.3-3.5.

159. This Board sees nothing in Subpart 2.20 of NQA-1 that would support Mr. Gundersen's claim that NQA-1 required DTE to have an in-house QA program in place when subsurface investigations were underway in the pre-application period. The terminology in Subpart 2.20 is very broad, and specifies activities to be conducted by the organization doing the actual subsurface investigation work to the extent that it mentions specific organizations at all. This wording accordingly supports the Applicant and Staff understanding that DTE's reliance on a B&V program for subsurface investigation activities is consistent with NQA-1.

160. B&V's Project Management Memorandum (PMM), submitted into evidence by DTE as Exhibit DTE 000056, includes a matrix that provides the details of how B&V met the

provisions of Subpart 2.20 of NQA-1 for all of the work it performed for DTE, including work by its subcontractors. Exhibit DTE 000056 at 32-38. According to Applicant witnesses Mr. Smith, Mr. Sacco, and Mr. Thomas, the PMM is the B&V mechanism for addressing how project activities were conducted, including the company's organization, responsibilities, QA, interfaces, and communication with DTE. Exhibit DTE 000015 at A40. The PMM, which was prepared by Applicant witness Mr. Thomas of B&V for communication to Applicant witness Mr. Smith of DTE, has been designated by DTE as a proprietary document. While we accordingly do not discuss its provisions in detail here, we agree that the PMM explains how Subpart 2.20 was applied to the Fermi 3 COLA development process. We therefore find that the record provides adequate evidence that the Fermi 3 subsurface investigations were performed consistent with the provisions of Subpart 2.20 of NQA-1-1994, as well as with NRC regulations.

5. Legal Argument Related to Contention 15A

161. In reaching our conclusion for Contention 15A, we must address a legal argument that is central to the Intervenors' claims, in addition to the factual issues described above. Specifically, the Intervenors contend that as a legal matter, DTE became an "Applicant" for all NRC regulatory purposes on the day it informed the NRC that it intended to prepare a COL application, in this case on February 15, 2007. Exhibit INTS 069 at A7. According to Mr. Gundersen, all requirements of 10 C.F.R. Part 50, including Appendix B, thus began to apply to DTE on that date, and the Fermi 3 Application should therefore be denied because DTE had not yet implemented an in-house QA program on that date. The Staff and Applicant argue that an entity becomes an "Applicant" on the date it submits an application to the NRC. After considering the legal arguments presented, which are discussed in more detail below, the Board concludes that the Staff and Applicant interpretation of NRC regulations is correct—applicants for NRC licenses must be able to demonstrate that the information in the applications they submit to the NRC is of high quality, but an "in-house" Appendix B QA program is not the only permissible means to comply with that requirement and may not always be required during the

pre-application period. For this reason, and because as described above we find that the Applicant and Staff's factual claims regarding DTE's compliance with applicable QA requirements are well supported in the record, we are able to conclude that the Applicant and Staff have carried their burden on Contention 15A.

a. Intervenor Argument

162. A large portion of the Intervenors' testimony for Contention 15 consists of legal argument concerning the definition of the word "Applicant" as used in NRC regulations. According to Mr. Gundersen, a company becomes an "Applicant" for NRC regulatory purposes on the day it informs the NRC that it intends to prepare and submit an application for an NRC license. *See* Exhibit INTS 068 at A15; Exhibit INTS 069 at A7 & A10; Tr. at 402 & 404. According to Mr. Gundersen, defining "Applicant" in this way is essential if NRC's QA regulations are to function—for example, he says, Appendix B permits an *applicant* to delegate QA functions to a contractor, but does not include a provision allowing an entity *preparing to become an applicant* to delegate such functions. Tr. at 402. He relies on this interpretation for his primary claim related to Contention 15A: that DTE could only delegate QA work to B&V if it was subject to Appendix B in all other respects, and that the delegation could only be performed from within a DTE QA program under the supervision of a DTE QA manager. Tr. at 402 & 404.

163. As legal authority for this position, the Intervenors cite a 1973 Appeal Board decision, *Consumers Power Co*. (Midland Plant, Units 1 and 2), ALAB-106, 6 A.E.C. 182 (1973), which Mr. Gundersen described as prohibiting the use of a "self-executing" QA program. Tr. at 403. According to Mr. Gundersen, *Midland* states that "you can't turn over responsibility to a vendor to do your QA for you," and that the term "self-executing" in this decision means relying on a contractor's program. *Id*.

164. Mr. Gundersen also testified that his interpretation of the word "Applicant" had implications beyond QA, and was equally essential for other sections of NRC regulations that use the term. Specifically, he cited the regulations concerning employee misconduct in 10

C.F.R. § 52.4, whistleblower protections in 10 C.F.R. § 52.5, regulations concerning completeness and accuracy of information in 10 C.F.R. § 52.6, and regulations concerning reporting of defects and non-compliance in 10 C.F.R. Part 21. Exhibit INTS 069 at A10. For example, according to Mr. Gundersen, not using his definition of "Applicant" would mean that whistleblowers have no protections and companies may make false statements to the NRC with impunity. Tr. at 421.

b. Staff Argument

165. The Staff's prefiled written testimony and Statements of Position do not address Mr. Gundersen's legal argument because it was not fully explained until his Rebuttal Testimony. At hearing, the Board therefore asked Staff counsel to address this matter in closing argument. Tr. at 638-39. Staff counsel emphasized that defining the legal responsibilities of an "Applicant" is necessarily informed by an understanding of when the NRC has jurisdiction to take an enforcement action such as issuing an NOV. Tr. at 674. According to Staff counsel, the NRC's decision to withdraw the portion of its original NOV dealing with pre-application activities was based on the limits of NRC's enforcement authority; it did not mean that the NRC had no interest in whether QA had been conducted for pre-application activities, but rather that the NRC would be using the licensing process to obtain the necessary information for resolving any pre-application issues that might be relevant to whether the submitted application meets QA requirements. Tr. at 674-75. Mr. Lipscomb's Direct Testimony regarding the history of the Staff's NOV supports this explanation of how, using the licensing process, the Staff had sufficient regulatory tools (such as RAIs and audits) to review the QA that was applied to pre-application activities relevant to the application that was ultimately submitted. Lipscomb Direct Test., Exhibit NRC S23 at A22.

166. Staff counsel also addressed the term "self-executing" in the *Midland* decision, asserting that the Intervenors both misinterpreted that term and otherwise failed to distinguish the factual situation in *Midland* from the factual situation in this proceeding. First, the Staff

observed that *Midland* did not refer to a contractor's QA program, but rather to a program that existed only on paper and had not been implemented. Tr. at 665-66, referencing *Midland*, ALAB-106, 6 A.E.C. at 184. Second, the Staff argued that *Midland* did not deal with pre-application activities like site characterization, but rather with post-application activities that would normally require an NRC construction permit (pouring concrete for safety-related structures) and that the company was performing under an exemption it had been granted from NRC regulations. Tr. at 666-67, referencing *Midland*, ALAB-106, 6 A.E.C. at 185. According to Staff counsel, the subsurface investigations in Fermi were not NRC-licensed activities to which the requirements of Appendix B would automatically apply, and, accordingly, NRC enforcement authority over those activities was not in effect in 2007 when the activities took place. Tr. at 677, referencing 10 C.F.R. § 50.10(a)(2)(ii). For this reason, the Staff focused its licensing review on determining whether the information in the Fermi 3 COLA was reliable, and on building a record through the licensing process to support an NRC decision on the ultimate adequacy of the application. Tr. at 677-78.

167. Counsel for the Staff also addressed Mr. Gundersen's arguments with respect to NRC regulations other than the QA provisions in Appendix B. The Staff argued that regulatory requirements related to submitting information to the NRC, including those related to deliberate misconduct, completeness and accuracy of information, and certain whistleblower scenarios, would become enforceable by the NRC at the time an entity submitted materially incorrect information in an application to the NRC, even if that information was prepared or documented at an earlier time. Tr. at 688-89. Furthermore, counsel for the Staff asserted that individual whistleblower protections such as non-discrimination and non-retaliation are enforced by the Department of Labor and not the NRC, meaning that those protections would be unaffected by the interpretation with which the Intervenors were concerned. Tr. at 686.

c. Applicant Argument

168. In the Applicant's Direct Testimony, Mr. Smith and Mr. Stasek stated that

> There are no QA requirements that apply prior to submittal of a COL application — that is, before a company is an "applicant." Rather, implicitly, the prospective applicant must conduct activities that are important to safety (particularly safety-related site investigation activities) in a manner such that the quality can be demonstrated to support the eventual application.

Exhibit DTE 000015 at A21. It is this statement to which Mr. Gundersen was responding when he presented the argument in his Rebuttal Testimony. *See* Exhibit INTS 069 at A6. At hearing, counsel for DTE clarified that the quoted statement referred to enforceable requirements in the sense of being subject to NRC enforcement actions such as NOVs. Tr. at 697.

169. Counsel for the Applicant further stated that the lack of enforceable QA requirements during the pre-application period does not imply that there are no expectations that the information in a COL application be of high quality. Tr. at 697. Counsel for DTE asserted that DTE met these expectations by delegating the work of performing subsurface investigations to a contractor with an Appendix B QA program in place to control that work. *Id*. He stated that DTE retained overall responsibility over the delegated work and is ultimately the organization that must be able to demonstrate that the safety-related information in the Fermi 3 COLA is of high quality and that there is reasonable assurance that the plant can be designed, built, and operated relying on that information. Tr. at 700.

d. Board Findings

170. The Board has examined the *Midland* decision and concludes it does not support Mr. Gundersen's argument that DTE's use of a contractor QA program fails to comply with NRC's regulations. Rather, the Board agrees with the Staff that the concern expressed in *Midland* about a "self-executing" program referred to a program that exists on paper only and has not been implemented. *Midland*, ALAB-106, 6 A.E.C. at 184. As the Appeal Board ruled in that case, it is undoubtedly within the authority of a Licensing Board to examine whether a QA program purported to be in place has, in fact, been implemented as described. *Id*. Indeed, in

this Decision we have conducted just such an examination with respect to whether the B&V QA program was implemented as described. However, the *Midland* decision does not address questions related to pre-application activities or to delegation of QA work to contractors, as the issues in that case were related to post-application activities and to deficiencies in an applicant's own QA program. *Id*. at 185. The *Midland* decision thus does not support the Intervenors' interpretation of the NRC's QA requirements or their position on the merits of Contention 15.

171. We are also unpersuaded by Mr. Gundersen's concerns regarding the definition of the word "Applicant" as relevant to the scope or implementation of NRC's QA requirements. 10 C.F.R. § 50.2 defines an Applicant as "a person or an entity applying for a license, permit, or other form of Commission permission or approval under this part or part 52 of this chapter." We note that this definition was first added to the "Definitions" section of 10 C.F.R. Part 50 in a 2007 rulemaking, and the regulatory history for that rulemaking provides no information on the Commission's intent regarding the definition's applicability during the pre-application period. *See generally* "Licenses, Certifications, and Approvals for Nuclear Power Plants; Final Rule, 72 Fed. Reg. 49,352, 49,396 (Aug. 28, 2007) (clarifying that the definition was added to encompass permissions that are not technically licenses or permits, such as standard design approvals under 10 C.F.R. Part 52). Consistent with the Staff and Applicant interpretations, which focus on the extent of NRC enforcement jurisdiction, we see no support for the conclusion that the Commission's intent in including that definition was to extend its jurisdiction over the QA activities of entities that have not yet sought an NRC license nor are required to have one. Moreover, as the parties acknowledge, there is no question that once an application is submitted the NRC can take enforcement action regarding material inaccuracies as well as, of course, deny the application if it fails to meet all NRC requirements (QA or otherwise). Therefore, we see no grounds for Mr. Gundersen's broad claims that the Applicant and Staff interpretation of the regulations would, for example, invite misrepresentations to the NRC in applications or otherwise create a gap with respect to the NRC's ability to take actions

necessary to fulfill its regulatory mission of protecting public health and safety.

172. In reaching our legal conclusions we have also found it necessary to examine the definition of the term "responsibility" that is found in Section I, "Organization," of Appendix B. Appendix B states that "[t]he applicant may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part thereof, but shall retain responsibility for the quality assurance program." The term "responsibility" is not defined in 10 C.F.R. Part 50.

173. At hearing, Mr. Gundersen claimed that an NRC applicant relying on a contractor program without having an in-house program in place amounts to not retaining "responsibility" for a QA program, and that it is the same as trying to have a "self-executing" QA program as was found unacceptable in the *Midland* decision. *See* Tr. at 403-04. In contrast, the Staff and Applicant explained why "responsibility" should be interpreted in more general terms as referring to the organization that must ultimately be able to stand behind the data in an application, submit it to the NRC under oath and affirmation, and bear the risk of not receiving a license if the application is deemed to be inadequate. Tr. at 575-576, 594-96, 669-70.

174. As stated above, the Intervenors were mistaken in claiming that use of the term "self-executing" in *Midland* referred to QA programs delegated to contractors. Because the facts of *Midland* did not concern delegation, the case provides no support for the Intervenors' argument that DTE's ultimate "responsibility" for QA under Appendix B required an in-house Appendix B QA program from the beginning of the pre-application stage. Indeed, *Midland* simply acknowledged that a QA program that appears well-written on paper still might not be found to comply with the regulations in the face of actual, discovered deficiencies in the practical implementation of that program. Therefore, *Midland* actually supports the Applicant and Staff reasoning that DTE's demonstrated oversight of its contractor, coupled with an absence of unresolved violations or deficiencies in implementation, provides a sufficient basis for concluding that it has in fact met NRC QA requirements.

175. Furthermore, the Staff and Applicant definition of "responsibility" is not limited only to "liability," as Intervenors' counsel suggests (Tr. at 657). Rather, the Staff and Applicant acknowledge that demonstrating "responsibility" would also include a focus on the mechanisms by which an applicant demonstrates to the NRC that appropriate QA controls were in place when the application was developed. We agree, and having an in-house Appendix B QA program is certainly one way an applicant may make this demonstration; however, other ways may be acceptable. Whether any specific approach employed by an applicant is acceptable is a fact-specific determination, and in this case the Board has determined that DTE has provided sufficient information to make this demonstration.

C. Contention 15B

176. The third paragraph of Contention 15, designated Contention 15B, reads as follows:

> Contention 15B: Although DTE claims that in February 2008 it adopted a QA program that conforms to Appendix B, DTE has failed to implement that program in the manner required to properly oversee the safety-related design activities of B&V. This demonstrates an ongoing lack of commitment on the part of DTE's management to compliance with NRC QA regulations. The NRC cannot support a finding of reasonable assurance that the plant, as built, can and will be operated without endangering the public health and safety until DTE provides satisfactory proof of a fully-implemented QA program that will govern the design, construction, and operation of Fermi Unit 3 in conformity with all relevant NRC regulations.

Detroit Edison Co. (Fermi Nuclear Power Plant, Unit 3), LBP-10-9, 71 NRC 493, 510-11 (2010). The QA controls employed during the pre-application period, including the period from February 2008 to September 2008, are discussed above in relation to Contention 15A. For this reason, the discussion related to Contention 15B will focus on the QA program controlling post-application activities, including ongoing design work and ultimately construction and operation of the plant.

1. Staff Testimony

177. Written Direct and Rebuttal Testimony for the Staff was provided by Mr. George A. Lipscomb. The Staff relied on the same exhibits for Contention 15B that it relied on for Contention 15A.

178. Mr. Lipscomb testified that the NRC Staff review of Chapter 17.5 of the Fermi 3 COLA FSAR, which provides an assessment of the Fermi 3 QA program, including the QA program that is applicable during the design, construction, and operations phases of a nuclear power plant, is documented in Chapter 17 of the Staff's Safety Evaluation Report (SER) dated October 17, 2011 (Exhibit NRC S1). Lipscomb Direct Test., Exhibit NRC S23 at A13. Mr. Lipscomb further testified that the Staff review of the Fermi 3 QA program concluded that the QA program in the Fermi 3 COLA met the requirements of Appendix B. *Id*. at A14. According to Mr. Lipscomb, all QA issues identified in the Staff's August 2009 have been resolved. *Id*. at A15.

179. Mr. Lipscomb testified that the Staff followed the guidance of NUREG-0800 Section 17.5 (Exhibit NRC S11), of the Standard Review Plan (SRP) for QA Program Descriptions submitted by applicants, when reviewing the QA program submitted with the Fermi 3 COLA. *Id*. at A17. As described in the SER (Exhibit NRC S1), the Staff developed the guidance in Section 17.5 of the SRP using ASME NQA-1–1994, "Quality Assurance Requirements for Nuclear Facility Applications," supplemented by additional regulatory and industry guidance for nuclear operating facilities.

180. Mr. Lipscomb testified that Chapter 17.5 of the Fermi FSAR states that the Fermi 3 QAPD is based on NEI 06-14, commonly referred to as the "NEI QA Template." *Id*. NEI 06-14, "Quality Assurance Program Description," is a technical report prepared by the Nuclear Energy Institute (NEI) to provide a generic template to be used by applicants for licenses and permits under 10 C.F.R. Part 52 to aid in implementing NRC regulatory requirements related to QA programs. NEI 06-14 is based on ASME NQA-1-1994, "Quality Assurance Requirements

for Nuclear Facility Applications." See Exhibit NRC S12 at 1. The Staff has concluded that the QAPD template in NEI 06-14, Revision 7, can be used by applicants for 10 C.F.R. Part 52 permits or licenses for establishing a QA program description required by relevant sections of that part—10 C.F.R. § 52.79(a)(25) for a COL application. *Id.*

181. The Staff compared the Fermi 3 QAPD against NRC Staff-endorsed versions of NEI 06-14, which are indicated by the use of an '-A' designation in the template title (e.g., NEI 06-14A). During the period of the Fermi 3 FSAR review and related inspections, NEI 06-14 was also being updated by NEI and reviewed by the Staff. The Staff's safety review of the revised version of NEI 06-14, and the most recent NRC-endorsed version of the template itself, designated NEI 06-14A, Revision 7, are Exhibits NRC S12 and S13 in this proceeding. Both were issued in 2010. Lipscomb Direct Test., Exhibit NRC S23 at A17.

182. Mr. Lipscomb testified that the initial version of the Fermi 3 COLA, submitted in 2008, was based on an earlier version of NEI 06-14, designated NEI 06-14A, Revision 5. The final reviews of the Fermi 3 QAPD used NEI 06-14A, Revision 7, issued in August 2010 (Exhibit NRC S13). *Id*. Mr. Lipscomb testified that, between 2008 and 2010, the Applicant made a number of changes to FSAR Chapter 17.5 in response to Staff RAIs issued to reflect changes to NEI 06-14, and that these changes were reflected in the Staff evaluation in SER Chapter 17. *Id.* NEI 06-14A, Revision 7, is the version that the Applicant referenced in its February 2011 updates to the Fermi 3 FSAR and QAPD. *Id.*

183. Mr. Lipscomb testified that the NRC Staff reviewed the Fermi 3 QAPD against the acceptance criteria in SRP Section 17.5 and against NEI 06-14A, Revision 7, in the following areas: (1) Organization; (2) Quality Assurance Program; (3) Design Control; (4) Procurement Document Control; (5) Instructions, Procedures, and Drawings; (6) Document Control; (7) Control of Purchased Material, Equipment, and Services; (8) Identification and Control of Materials, Parts, and Components; (9) Control of Special Processes; (10) Inspection; (11) Test Control; (12) Control of Measuring and Test Equipment; (13) Handling, Storage, and

Shipping; (14) Inspections, Tests, and Operating Status; (15) Nonconforming Materials, Parts, or Components; (16) Corrective Action; (17) Quality Assurance Records; (18) Quality Assurance Audits; and (19) Non-safety-Related SSC Quality Assurance Control. Lipscomb Direct Test., Exhibit NRC S23 at A17. These areas are specified in the SRP (Exhibit NRC S11) and in NEI 06-14A, Revision 7 (Exhibit NRC S13), and together constitute the elements of a complete QAPD that meets the requirements of Appendix B. *Id*. As summarized in the SER (Exhibit NRC S1), the Staff concluded that, for each of these areas, the QAPD in the Fermi 3 Application met all applicable acceptance criteria and therefore complies with NRC regulations. *Id*.

2. Applicant Testimony

184. Written Direct and Rebuttal Testimony for the Applicant was provided by Peter W. Smith, Stanley Stasek, Ronald Sacco, and Steven Thomas. The Applicant relied on the same exhibits for Contention 15B that it relied on for Contention 15A.

185. Mr. Smith and Mr. Stasek testified for the Applicant that the QA program in the Fermi 3 COLA meets the requirements of Appendix B and is consistent with ASME NQA-1-1994, with the SRP, and with NEI-06-14. Exhibit DTE 000015 at A71, A74. This QA program applies to all application-related work since September 2008. *Id*. at A72.

186. Mr. Smith and Mr. Stasek further testified that the NRC Staff has completed its review of the Fermi 3 QA program, including with respect to those issues identified during the August 2009 inspection, and that no further issues related to the post-application QA program have been identified. *Id*. at A76-78. Mr. Smith and Mr. Stasek further testified that DTE has put QA implementing procedures into place and conducts regular audits and surveillances to ensure compliance. *Id*. at A79-81. Issues identified during audits and surveillances are entered into a Corrective Action Program, and there are also semi-annual management reviews. *Id*. at A82-84.

3. Intervenor Testimony

187. Written Direct and Rebuttal Testimony for the Intervenors was provided by Arnold Gundersen. The Intervenors relied on the same exhibits for Contention 15B that they relied on for Contention 15A.

188. In his Direct Testimony, Mr. Gundersen testified that the QA problems he identified occurred between 2007 and 2009, and included post-application as well as pre-application concerns related to subsurface investigations. Exhibit INTS 068 at A17. Mr. Gundersen also testified that he had five concerns related to the May 2010 RAI responses that have been admitted into evidence of this proceeding as Exhibit DTE 000054 and Exhibit NRC S7. Mr. Gundersen's first concern related to a three-month gap, from April to June 2009, during which he asserts that DTE had no one in charge of QA. *Id*. at A24. Mr. Gundersen's second concern was that reporting relationships mentioned in the May 2010 RAI responses did not match those identified in versions of the Fermi 3 COLA that predated the RAIs, and that DTE QA managers reported to the Director of Nuclear Development. *Id*. at A24. His third concern was that DTE did not notify NRC that it was deviating from the NEI template. *Id*. His fourth concern was that position titles mentioned in the May 2010 RAI responses did not match those identified in versions of the COLA that predated the RAIs. *Id*. at A23-A24. His fifth concern was that the need to supplement the COLA with RAI responses indicates that application itself was incomplete when submitted. *Id*. at A24. The first, second, and fourth of these issues appear to raise concerns regarding the post-application QA program.

4. Board Findings

189. Mr. Gundersen's challenge to DTE's post-application QA program appears to be limited to activities occurring between September 2008 and an unspecified point in 2009. Mr. Gundersen testified at hearing that he believed the DTE QA program was implemented in pieces, beginning with the ND QAPD, but that he believed those pieces did comply with Appendix B and with NQA-1 once they were implemented. Tr. at 438.

190. Mr. Lipscomb testified in his Rebuttal Testimony that the Staff's review is based on Revision 3 of the Fermi FSAR, which includes Revision 4 of the Fermi 3 QAPD dated February 2011. Lipscomb Rebuttal Test., Exhibit NRC S24 at A9. Revision 4 of the Fermi 3 QAPD is Exhibit DTE 000073 in this proceeding. Mr. Gundersen has not raised any challenges related to QA for activities occurring after February 2011, and both the Applicant and the Staff have provided testimony indicating that DTE's QA program complied with Appendix B as of that date. This Board therefore agrees with the Applicant and Staff that at least as of February 2011, the undisputed evidence in the record shows implementation of DTE's QA program for Fermi 3 consistent with Appendix B.

191. Furthermore, for the reasons outlined below, after considering the activities cited in the Staff's revised Inspection Report and NOV, as well as the issues raised by Mr. Gundersen in his testimony, we conclude that the record supports the conclusion that DTE's program was also in compliance with Appendix B from the start of the post-application timeframe, from September 2008 to February 2011, except for those items specifically cited in the NOV. The revised NOV, issued to DTE by the NRC Staff in April 2010, cites DTE for the following violations that extend into 2009:

A. from September 18, 2008 to August 21, 2009, DECo[27] failed to establish measures to assure that safety-related services purchased through its contractor, Black & Veatch (B&V) for Fermi 3, conformed to procurement documents. Specifically, DECo failed to assure that B&V was qualified to supply the services procured in the contract between DECo and B&V.

B. as of August 21, 2009, DECo had not accomplished procedures for activities affecting quality as prescribed in DECo Procedure Number NP 18.1 and NP 16.1. Specifically, DECo QA personnel had not completed any internal audits of applicable QA programmatic areas for Fermi 3 COL application activities to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program in accordance with NP18.1. Additionally for conditions adverse to quality, which were entered into the corrective action program prior to the inspection, DECo had not documented

[27] The DTE Electric Company was named the Detroit Edison Company prior to a formal name change on January 1, 2013, and is referred to as such in documents dated before that time. However, the legal entity has remained the same throughout this proceeding. DECo is an abbreviation for the Detroit Edison Company that was used in the 2009 Inspection Report and NOV.

> any trending evaluations to identify and correct recurring conditions adverse to quality for Fermi 3 COL application activities in accordance with NP16.1.

Exhibit NRC S4 (same as Exhibit DTE 000086). We therefore turn now to how those violations were resolved.

192. The second of these violations cites to violations of DTE's own procedures, rather than violations of NRC requirements directly. As Mr. Lipscomb testified, the April 2010 revised NOV documents the resolution of these two violations: the internal audit required by DTE procedures was performed the week of October 26, 2009, and the trend analysis was completed by October 31, 2009. Lipscomb Direct Test., Exhibit NRC S23 at A22, citing Exhibit NRC S3; see also Exhibit NRC S3. The second of these two violations was therefore resolved as of October 31, 2009. Furthermore, in light of that resolution, nothing in the record (including the Intervenors' testimony) provides any basis to believe that the violation has had an effect on the quality of DTE's safety-related design work for Fermi 3. Even before its resolution, this second violation does not appear to support an argument that the Fermi 3 COLA is flawed.

193. While the first of these two violations would appear to relate to DTE's delegation of work to B&V, the record demonstrates why the violation was adequately redressed and why it therefore provides no indication of an ongoing QA problem. Mr. Lipscomb testified for the Staff that DTE continued to delegate safety-related work to B&V even after the COLA was submitted and DTE had a QA program to control work by its own personnel. Lipscomb Direct Test., Exhibit NRC S23 at A25. B&V's qualification to provide these services is therefore important to determining whether DTE was in compliance with Appendix B.

194. In its response to the revised NOV, DTE explained that it initially considered the documentation it had in place during the pre-application period to be sufficient to assure that B&V was qualified to provide the safety-related services that it had delegated contractually. *See* Exhibit NRC S5 (same as DTE 000057). It continued to hold this belief as of September 2008. *Id*. In April 2009, however, DTE put a more comprehensive vendor qualification program into

place, which included a DTE audit of B&V in July 2009. *Id*. DTE's response to the revised NOV also contains information as to how DTE has confirmed that the safety-related activities performed by B&V between September 2008 and July 2009 were completed in accordance with 10 C.F.R. Part 50, Appendix B requirements. *Id*. The Staff documented its closure of this violation in Exhibit NRC S6 (same as Exhibit DTE 000087). Because these documents explain why this violation was resolved as of July 2009, the Board agrees that the record supports the conclusion that DTE was in compliance with Appendix B with respect to vendor qualification as of that date.

195. The record thus provides a persuasive basis for concluding that DTE had sufficient information to determine that B&V was qualified to supply the safety-related services procured by DTE prior to July 2009, and that this information included: (1) DTE's knowledge of the B&V QA program, including the QA program description detailed in contract documents; (2) audits and acceptance of COLA services under the B&V QA program by other U.S. nuclear utilities; (3) over three years of DTE experience with B&V, including direct interface with B&V's QA program implementation throughout COLA preparation and COLA maintenance activities; (4) DTE's review of B&V work product throughout COLA development and revision under the ND QAPD; (5) and DTE's audit which contains a documented review of B&V's records and project implementation documentation for multiple phases of the Detroit Edison Fermi 3 COLA project. DTE's NOV response also refers to additional details regarding the qualification of B&V that can be found in RAI responses dated May 2010, admitted into evidence in this proceeding as Exhibit NRC S7 (same as Exhibit DTE 000054). The Board agrees that the record contain sufficient information on B&V's qualification to perform safety-related work to demonstrate that the safety-related design work performed by B&V was conducted under appropriate QA controls between September 2008 and July 2009.

196. Mr. Gundersen also identified five issues in his testimony that he claims indicate the existence of QA problems after September 2008 and into 2009. Only three of these are

potentially relevant to Contention 15B: (1) a three-month gap, from April to June 2009, during which he asserts that DTE had no one in charge of QA; (2) reporting relationships mentioned in the May 2010 RAI responses (Exhibit NRC S7 (same as Exhibit DTE 000054)) that he claims do not match those identified in versions of the Fermi 3 COLA that predated the RAIs, and that DTE QA managers reported to the Director of Nuclear Development; and (3) position titles mentioned in the May 2010 RAI responses that he claims did not match those identified in versions of the COLA that predated the RAIs.[28] However, witnesses for DTE provided extensive and persuasive testimony concerning these issues, and for the following reasons, the Board concludes that Mr. Gundersen is simply mistaken in his claims.

197. Concerning the alleged three-month gap in QA staffing, Mr. Smith and Mr. Stasek provided testimony for the Applicant indicating that a Mr. Werner held DTE's top QA position for Fermi 3 between March 2008 and April 2009, and that Mr. Stasek was hired for this position in early March 2009. Exhibit DTE 000015 at A88. Accordingly, there was no gap, and there was even significant overlap between the two. *Id*. The two had different titles, as described in the discussion of position descriptions. *Id*.

198. Concerning reporting relationships, Mr. Smith and Mr. Stasek provided testimony that DTE's top QA manager did report to the Director of Nuclear Development under the ND QAPD from March 2008 to October 2008, as well as under Revision 0 of the Fermi 3 QAPD from October 2008 to June 2009. *Id*. at A89. According to Mr. Smith and Mr. Stasek, the Director of Nuclear Development was the highest management level associated with the Fermi 3 project at that time, even if the position was at the Director level rather than the Vice President

[28] The other two concerns are not directly relevant to post-application activities. Mr. Gundersen claims that DTE did not inform the Staff that it was deviating from the NEI template, but provides no evidence for his claim that DTE was obligated to do so. In any event, DTE informed the NRC Staff that it would rely on the B&V QA program for subsurface investigations on May 31, 2007. *See* Exhibit DTE 000047. The last of Mr. Gundersen's claims is simply that the Fermi 3 COLA was incomplete when submitted. This is a general statement that does not include a litigable issue and, in any case, is addressed by our determinations above indicating that the factual record demonstrates the adequacy of the QA program as revised during the Staff's review.

level, and this reporting relationship was put into place specifically to insure the QA function's independence from line functions. *Id*. The reporting relationship changed in June 2009 so that the QA function reported to the Senior Vice President for Major Enterprise Projects. *Id*. Mr. Smith and Mr. Stasek also testified that the QA manager had a clear reporting relationship to upper management at all times, contrary to Mr. Gundersen's claims. *Id*. at A90.

199. Concerning position titles, Mr. Smith and Mr. Stasek testified that Mr. Gundersen appears to have confused titles used in different QAPDs in place at different times. Specifically, the title of Nuclear Development QA Manager was in place only under the ND QAPD that controlled DTE's pre-application activities, and is not used in the QAPD in the Fermi 3 application. *Id*. at A94. Mr. Smith and Mr. Stasek also testified that the title of the position changed between Revision 0 and later revisions of the Fermi 3 QAPD, from New Plant Oversight Manager to Director, Quality Management. *Id*. at A86-88. However, all three titles referred to positions with the same responsibilities. *Id*.

200. For these factual QA issues identified by Mr. Gundersen, DTE has provided adequate testimony to refute those concerns. DTE's top QA position was filled continuously from March 2008 to the present, its reporting relationship to senior management shows independence from line functions for all project phases, and DTE has explained the sequence of position titles for the top QA position so as to remove any confusion. Accordingly, the Board finds that the issues raised by Mr. Gundersen do not indicate any lack of compliance with Appendix B during the period between September 2008 and February 2011.

201. In sum, contrary to the Intervenors' claims related to Contention 15B, the Board finds ample support in the record to conclude that the violations identified in the April 2010 revised NOV were resolved no later than October 31, 2009, and DTE has provided evidence to demonstrate that these violations had no impact on safety-related design work performed after September 2008. Likewise, the record fully supports the conclusion that in all other respects,

DTE's QA program for Fermi 3 was in compliance with Appendix B for all periods from September 2008 to the present. We therefore resolve Contention 15B in favor of the Applicant.

VII. CONCLUSIONS OF LAW FOR CONTENTION 15

202. The Board has considered all of the evidence presented by the parties on Contention 15. Based upon a review of the entire record in this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the findings of fact set forth above, which are supported by reliable, probative and substantial evidence in the record, the Board has decided all matters in controversy concerning this contention and reaches the following conclusions.

203. With respect to Contention 15A and pre-application matters, in particular the subsurface investigations that were used to develop the Fermi 3 COL Application, the safety-related work in question was performed by B&V under its QA program, which is consistent with the requirements of Appendix B to 10 C.F.R. Part 50. DTE used contractual mechanisms to delegate the work to B&V and to specify that it be done under appropriate QA controls, and also provided sufficient oversight to ensure that B&V complied with the terms of its contract. The Intervenors have provided no credible authority for their legal argument that DTE was required to have an in-house Appendix B QA program in place before it delegated this work. We therefore conclude that the information in the Fermi 3 COLA that is based on the subsurface investigations was developed under appropriate QA controls, and we find for the Applicant on Contention 15A.

204. With respect to Contention 15B and post-application matters, the QA plan in the Fermi 3 COLA meets the requirements of Appendix B and is consistent with the NRC's Standard Review Plan and the NEI QA template in NEI-06-14A, Revision 7. All QA violations identified by the Staff have been resolved, and the record shows that those violations had no

effect on any safety-related activities performed after initial submittal of the application. We therefore conclude that there is reasonable assurance that the plant, as built, can and will be operated without endangering the public health and safety because the Applicant has provided satisfactory evidence of a fully implemented QA program governing the design, construction, and operation of Fermi Unit 3 in conformity with all relevant NRC regulations, and we find for the Applicant on Contention 15B.

Respectfully Submitted,

/Signed (electronically) by/
Marcia Carpentier
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
(301) 415-4126
Marcia.Carpentier@nrc.gov

/Executed in Accord with 2.304(d)/
Kevin Roach
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
(301) 415-2779
Kevin.Roach@nrc.gov

/Executed in Accord with 2.304(d)/
Megan Wright
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
(301) 415-2314
Megan.Wright@nrc.gov

Dated at Rockville, Maryland
This 22nd day of January, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
	)	
DETROIT EDISON CO.	)	Docket No. 52-033
	)	
	)	
(Fermi Nuclear Power Plant, Unit 3)	)	

CERTIFICATE OF SERVICE

I hereby certify that the document entitled NRC STAFF PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR CONTENTIONS 8 AND 15, dated January 22, 2014, has been filed through the E-Filing system this 22nd day of January, 2014.

/Signed (electronically) by/
Marcia Carpentier
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
(301) 415-4126
Marcia.Carpentier@nrc.gov

Dated at Rockville, Maryland
This 22nd day of January, 2014